October 2, 1961

PULP & PAPER

Softwood comeback

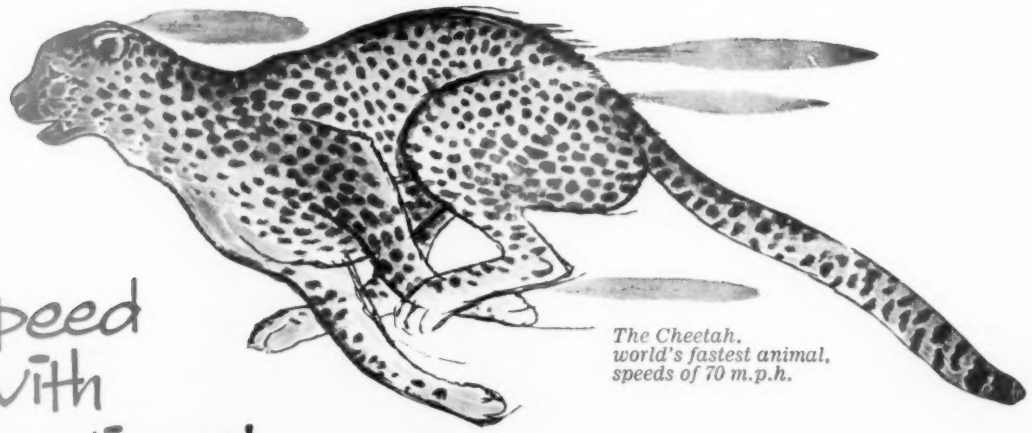
behind Oxford's Maine expansion 41

Record 35.5 million tons outlook for this year 5

Wausau doubles output with new machine 9

Corrugating men look hard at flexography 48

Multiple use develops full forest potential 59



The Cheetah, world's fastest animal, speeds of 70 m.p.h.

Speed with functional perfection

After several years of design and trials, we now offer this high speed Rotabelt Suction Unit. Since its introduction it has completely proved beyond doubt that it is one of the most outstanding and efficient pieces of machinery ever offered to the Paper trade. Units are now increasing paper mill efficiency throughout the world.

HIGH SPEED

ROTABELT

REGD. TRADE MARK

suction unit

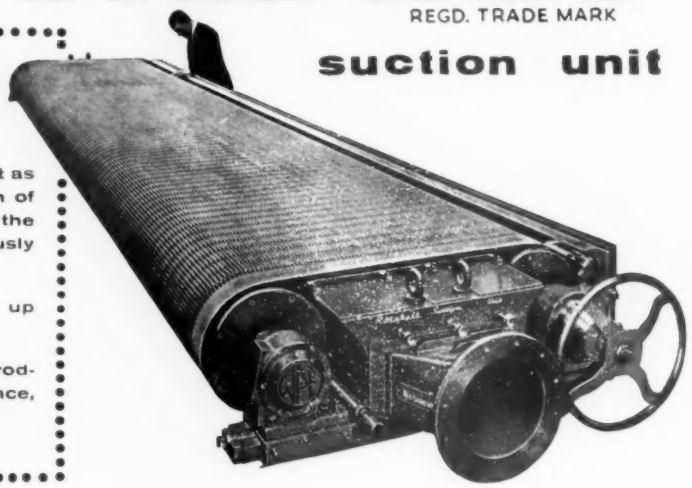
RECENT INSTALLATIONS HAVE ACHIEVED

Increase in wire life as great as 300% by the total elimination of friction between the wire and the flat suction boxes previously used.

Reduction in couch power up to 30%.

Considerable increase in production with less maintenance, due to fewer wire changes.

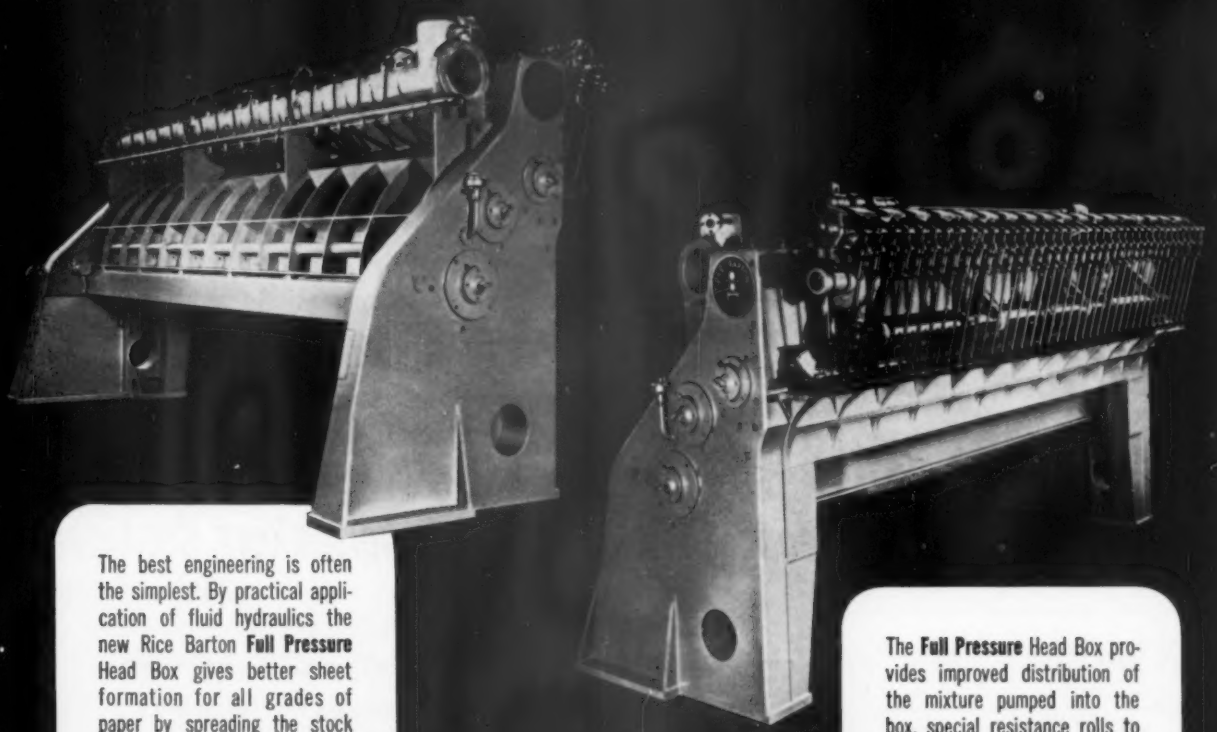
Send for leaflet to-day



W. P. EVANS & SON LTD.

NASHUA NEW HAMPSHIRE TEL. TUXEDO 2-9081

Better Sheet Formation for all grades of paper with Rice Barton's Full Pressure Head Box

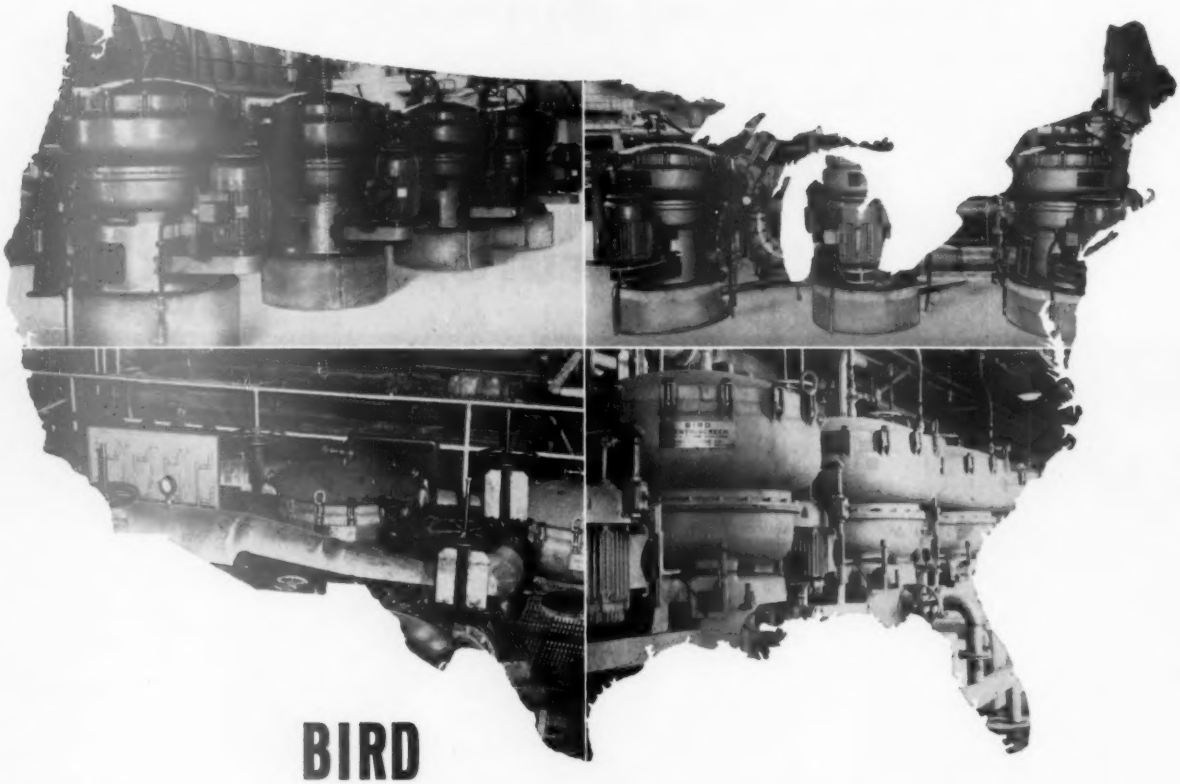


The best engineering is often the simplest. By practical application of fluid hydraulics the new Rice Barton **Full Pressure** Head Box gives better sheet formation for all grades of paper by spreading the stock evenly from the header through the box onto the wire.

The **Full Pressure** Head Box provides improved distribution of the mixture pumped into the box, special resistance rolls to even the flow inside the box and a nozzle adjustment that floats the stock onto the wire the full width of the machine—smoothly, thoroughly mixed, without streaks or boiling. Write for more details.

Rice Barton CORPORATION • WORCESTER, MASS.

FOURDRINIERS, PRESS SECTIONS, DRYER SECTIONS, CALENDERS, REELS, WINDERS, HEAD BOXES, SIZE PRESSES, BREAKER STACKS, DIFFERENTIAL DRAW CONTROL DRIVES AND CONE PULLEY DRIVES, PULPING EQUIPMENT, HIGH VELOCITY AIR DRYERS, TRAILING BLADE COATERS, FIBRE-FLASH DRYING SYSTEMS



BIRD CENTRISCREENS

are sweeping the Pulp and Papermaking Continent

The Centriscreen installations pictured are only a suggestion of the number and variety that are now on the job in both pulp and paper mills.

You owe it to your stock — and your stockholders — to find out what *centriscreening* can do to help you make better pulp and paper and more of it per day at lower screening cost per ton.

Let us make recommendations, layouts and estimates.

BIRD MACHINE COMPANY

SOUTH WALPOLE, MASS.
REGIONAL OFFICES: EVANSTON, ILLINOIS
PORTLAND 4, OREGON • ATLANTA 9, GEORGIA
Canadian Manufacturers of Bird Machinery
CANADIAN INGERSOLL-RAND COMPANY, Limited, Montreal

October 2, 1961 PUBLISHED EVERY OTHER WEEK VOLUME 35, NUMBER 20 PULP & PAPER

PULSE OF THE INDUSTRY

NEWS DIGEST 5

BUSINESS

The industry is feeling the recovery, should finish the year at peak rate 5
A new supply-demand forecast can be expected from BDSA within a year 7

INDUSTRY GROWTH

Wausau doubles production of paper with start up of a new machine 9
Bathurst makes broad capital changes 11
Prince George studied as pulp mill site 11
M&O details its improvement program 15
Tempo of expansion is pepping up 15
Longview Fibre starts ninth machine 15

MERGERS

Merger may spur Fox River's growth 19

PUBLIC RELATIONS

APPA chairman Whitaker calls upon the industry to improve its public relations 21

SAFETY

One way to help eliminate serious injuries is to eradicate minor ones, an expert says 21

PULPWOOD MANAGEMENT

Bowaters hopeful it can save over half the wood in burned land in Newfoundland 25
U. S. Pacific timber sales drop 25

EDUCATION

Longview will have accredited four-year college course in forest products subjects 25

PEOPLE

Cellulose Sales fills three new posts 27
Strathmore elevates technical personnel 27
Beloit's Elbert H. Neese dies 27
TAPPI corrugated confab draws 300 84

COVER PICTURE: Dark patches in Maine forest are softwoods which have made possible a $15 million expansion at Oxford Paper Co.

FEATURES

SOFTWOOD KRAFT replaces sulfite at Oxford's Rumford, Me., mill. Changeover is made possible by use of pine and sawmill chips for first time, and greater consumption of hemlock 41

CORRUGATED CONTAINERS are being used increasingly in packaging. Also shaping up as an important trend is wider application of flexographic printing on corrugated 48

PULP SHIPMENTS are boosted by Hammermill from its Erie, Pa., mill with a Sandy Hill-Kamyr feltless wet machine 52

PULPWOOD WORLD: More companies than ever before are practicing multiple use of their land. They're finding that it's paying handsomely in increased revenues and public goodwill 59

DEPARTMENTS

Meetings 31
How to do it 50
Literature 72
Chemicals 72
New equipment 79
Strictly personal 86
Staff listing 94
The last word 94

PULP & PAPER is published every other week by Miller Freeman Publications, Incorporated, Emmett Street, Bristol, Conn. Editorial & Executive Offices, 370 Lexington Ave., New York 17, New York. Second-class postage paid at Bristol, Conn.

RATES: Single copy 50¢. U.S. and Canada—1 yr., $5; 2 yrs., $8; 3 yrs., $10. Other countries—1 yr., $7; 2 yrs., $12; 3 yrs., $16. Sterling or any European funds may be sent to Miller Freeman Publications, 130 Crawford Street, London W. 1, England.

CIRCULATION DEPT., 500 Howard St., San Francisco 5, Calif., C. C. Baake, Circ. Mgr. Send subscription orders and changes of address to PULP & PAPER, above address. Include both old and new addresses.

POSTMASTER: Send form 3579 to Circ. Dept., PULP & PAPER.

General Electric Makes Eddy-current-coupling Drives

And they're dependable drives. The complete line includes water-cooled and air-cooled eddy-current couplings. We call them KINATROL* drives. Ratings are from 1 to 150 horsepower, operating from standard a-c power.

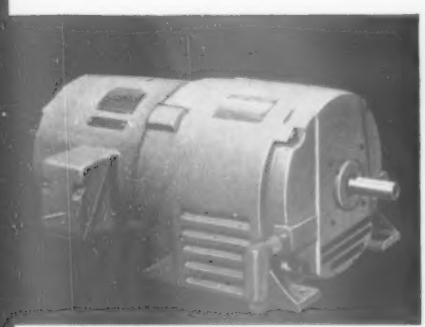
A General Electric KINATROL drive is not just another eddy-current coupling. For instance, in the water-cooled coupling, water control is packaged. You'll see much less external piping. Furthermore, the coupling is protected from flooding—and the air gaps are dry, preventing corrosion.

KINATROL couplings are compact, field proven and dependable. General Electric has had a good deal of experience in the engineering, manufacturing, and application of packaged adjustable-speed drives. And we know how important service is to a customer.

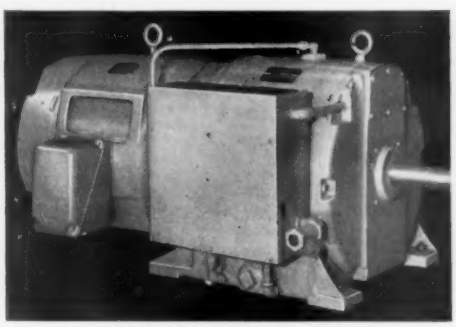
KINATROL —a good product, with the kind of service you can depend on. Please call your nearest General Electric Sales Office for further details.

*Trademark of General Electric Company

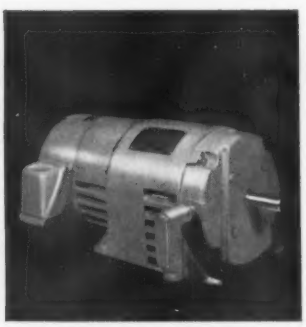
821-07



AIR COOLED, 7-1/2 to 100 HP



WATER COOLED, 25 to 150 HP



AIR COOLED, 1 to 5 HP

DIRECT CURRENT MOTOR AND GENERATOR DEPARTMENT

GENERAL ELECTRIC

ERIE, PENNSYLVANIA

PULP & PAPER

NEWS DIGEST...

New wave of optimism pervades industry
as it catches up with upturn and heads for record-breaking fourth quarter. Paper and board production for first 8 months was up 1.5% to 23,410,000 tons. That's 10.4 million for paper, up 0.4%, and 10.9 million for board, up 2.9%; while construction paper and board at 2.1 million was down 0.4%.

Leading move to recover price cuts
made earlier this year was by St. Regis Paper Co., which boosted kraft paper prices as of Oct. 1. The St. Regis move was followed later with moves by Olin, IP and Union Bag-Camp in that order.

Little change in market pulp prices
was recorded in the last quarter. Bleached kraft of 90 GE is about $150/ton; 86 brightness is $140 and hardwood kraft is about $135 to 140/ton. Bleached sulfite with 90 GE is around $140/ton; 86 GE is around $135 and hardwood sulfite sells for about $137/ton. Unbleached kraft is going at $120-125/ton; unbleached sulfite is at $125/ton and soda is around $130 to $135.

Research in jet-age style
characterizes the thinking of Scott Paper Co., which dedicated a new research center and executive headquarters within walking distance of Philadelphia's International Airport a fortnight ago. President Thomas B. McCabe revealed Scott had "a very, very unusual plastic material," as well as "a number of interesting products," in the works.

Inadequate timber supply
is a possibility seen by Yale's Dean George A. Garratt, keynoter at Forest Land Use Conference at Washington last month. He warned government, industry, labor and conservation groups that "today's forest acreage is all we have now and more than we shall have in the future." More details on the conference in the Oct. 16 PULP & PAPER.

Coating news is being made all over
and biggest news is entry of Great Northern Paper Co. into coated publication field. Green light has been given by its directors to spend up to $6-million for off-machine blade coater, and related facilities, at Millinocket, Me., mill.

Canadian trend to coating
is under way in both paper and paperboard. Latest move is by Provincial Paper, Ltd., which is moving "at once" to install an off-machine blade coater at Port Arthur, Ont. Cost will be $2.5 million. Grades will be publication and catalog.

Big swing to polyethylene-coated
milk cartons is further seen in one prediction that by year-end more than 25% of all milk cartons will be so coated. By 1964, more than 500,000 tons of milk cartons are expected to be poly-coated. Hottest item right now is polyethylene extruders—in the South and the West.

Industry's growth plans continue
as economy perks up. Wausau has started up its new paper machine. Fox Paper Co.'s rebuilt machine is back on line; Strathmore is modernizing No. 6 at Woronoco, Mass. See "Industry Growth," page 9.

. . . . . BUSINESS

Fourth quarter outlook improves

Paper and board production may top 35.5 million tons for year

NEW YORK—The sharp recovery in the nation's economy has finally made its impact upon pulp, paper and paperboard. For the past few months (through August), the paper industry has been operating at an annual rate, adjusted for seasonal factors, of well over 36 million tons—in fact, almost 37 million tons.

Barring unexpected developments, the industry should finish up the fourth quarter operating at an annual rate of about 37 million tons. At year end capacity rates for paperboard may be in the mid-nineties; paper in the low nineties. This apparent difference in operating rates stems from the different computing methods used by the American Paper & Pulp Assn. and the National Paperboard Assn.

No indications of weaknesses
are seen by some industry observers in the general economy. The heavy goods sectors have shown an increase in their order patterns which normally means a good strong demand for the economy as a whole.

There is one major weakness and this is in retail sales. There is every reason why retail sales should expand

37

FLEXIBLADE
COATERS

Partial list of customers who have purchased a Black-Clawson Flexiblade® Coater for pilot or commercial operation

BATHHURST POWER & PAPER CO. / CANADIAN INTERNATIONAL PAPER COMPANY CROSSETT PAPER MILLS — RESEARCH DIVISION / DEWEY & ALMY CHEMICAL DIVISION, W. R. GRACE & CO. / THE DOW CHEMICAL COMPANY / INTERNATIONAL PAPER COMPANY / THE KVP COMPANY LIMITED / NEWTON FALLS PAPER MILL, INC. NEW YORK & PENNSYLVANIA CO., INC. / OLIN / RIEGEL PAPER CORPORATION

plus many other leading companies here and abroad.

DILTS DIVISION
Fulton, New York
CONVERT WITH CONFIDENCE

BLACK-CLAWSON

sharply in the next three months, but until now they have been lagging behind. More money should be available for consumer spending because employment is at an all-time high and considerable money is being pumped into the economy. If retail sales do pick up, this should fill in the final chink in the economy and the industry should have a good fourth quarter.

Oddly enough, says one observer, the rate of production for the industry is just about in line with the rate of consumption of final products. On the whole, there does not appear to be any significant inventory building. In the past five months there has been some inventory building in paperboard, but paper production is about in line with consumption.

The two strong factors that may push the industry past the 35 million ton output mark are that the industry is now operating below final consumption requirements and that consumption itself is on the increase.

Significant contributions to the improved economy stem from increases in personal income, employment rise and industrial activity. According to the U.S. Dept. of Commerce, price stability has characterized major markets in the past few months. Gross national product (GNP) is at a new high. Other plus factors: stepping-up government spending, increase in residential building activity and a firming in business plant and equipment spending.

The operator in the mill may not realize it, but these are the factors which contributed significantly to the recovery of the economy and eventually to improved operating rates for his machine. A major factor has been the shift by industry in general from inventory liquidation to accumulation. Auto sales contributed heavily to the second quarter recovery—in fact, about 50% of the increase in GNP stems from the rise in auto sales.

The downtrend in profits, experienced by industry as a whole, was also sharply reversed in the first quarter. Paper industry sales rose 12% in the second quarter compared to the same time last year, and were 7% higher than the first quarter of this year. Sales for the second quarter were $1.16 billion compared to $1.08 billion for the first quarter and $1.04 billion for the same time in 1960.

GNP reached a record of $516.1 billion for the second quarter of this year compared to $506.4 billion for the same time last year and $500.8 billion for the first quarter of 1961. Personal income, another important factor which also has its impact upon a mill's operating rates, reached $413.2 billion for the second quarter of this year, compared to $403.1 billion for the second quarter of 1960 and $404.7 billion for the first quarter of 1961.

Who has the money in the 50 states? According to a report by the Dept. of Commerce, here are the leaders in personal per capita income. Leading state is Delaware with $3,013. Others in order are District of Columbia, $3,008; Connecticut, $2,863; Nevada, $2,844; New York, $2,789; Alaska, $2,735; California, $2,741; New Jersey, $2,665; Illinois, $2,613 and Massachusetts, $2,519. The report notes that the fact that all of these states except Alaska are in New England, the Mideast, Great Lakes and Far West indicates the high incomes in the North and West.

Major trends shaping up in paper are tissue and machine coated papers—and of course—exports (See International). Sanitary tissue stock is reportedly up 6% from January to June of this year—the only major group says the Dept. of Commerce, except machine coated papers which hasn't suffered production setbacks over the past three economic recessions. Toweling stock has risen 83.3% in the 1952-1960 interval, is up 12.9% for the first six months of this year. ■

BDSA plans new pulp-paper survey

NEW YORK—The United States pulp, paper and paperboard industry will have a new federal government survey and forecast of supply and demand for its products within about 12 months.

The last such survey-forecast to be issued from Washington, D.C., was made public on June 17, 1957. It immediately:

1. Sparked readjustments of expansion plans of several major companies. There was a definite cut-back in wood-pulp expansion projects as a result of what the report revealed.
2. Set off endless debates as to its conclusions.

The news that there is going to be a new survey and forecast for pulp and paper came out of a joint conference which was held in New York recently by the Business and Defense Services Administration of the Department of Commerce and the Associated Business Publications, of which PULP & PAPER is a member.

James M. Owens, director of the newly-created office of industrial materials, Business and Defense Services Administration, Department of Commerce, mentioned this plan for a new survey and forecast during a "round-table" discussion of the various services which the BDSA has to offer to business and industry.

DRUMM

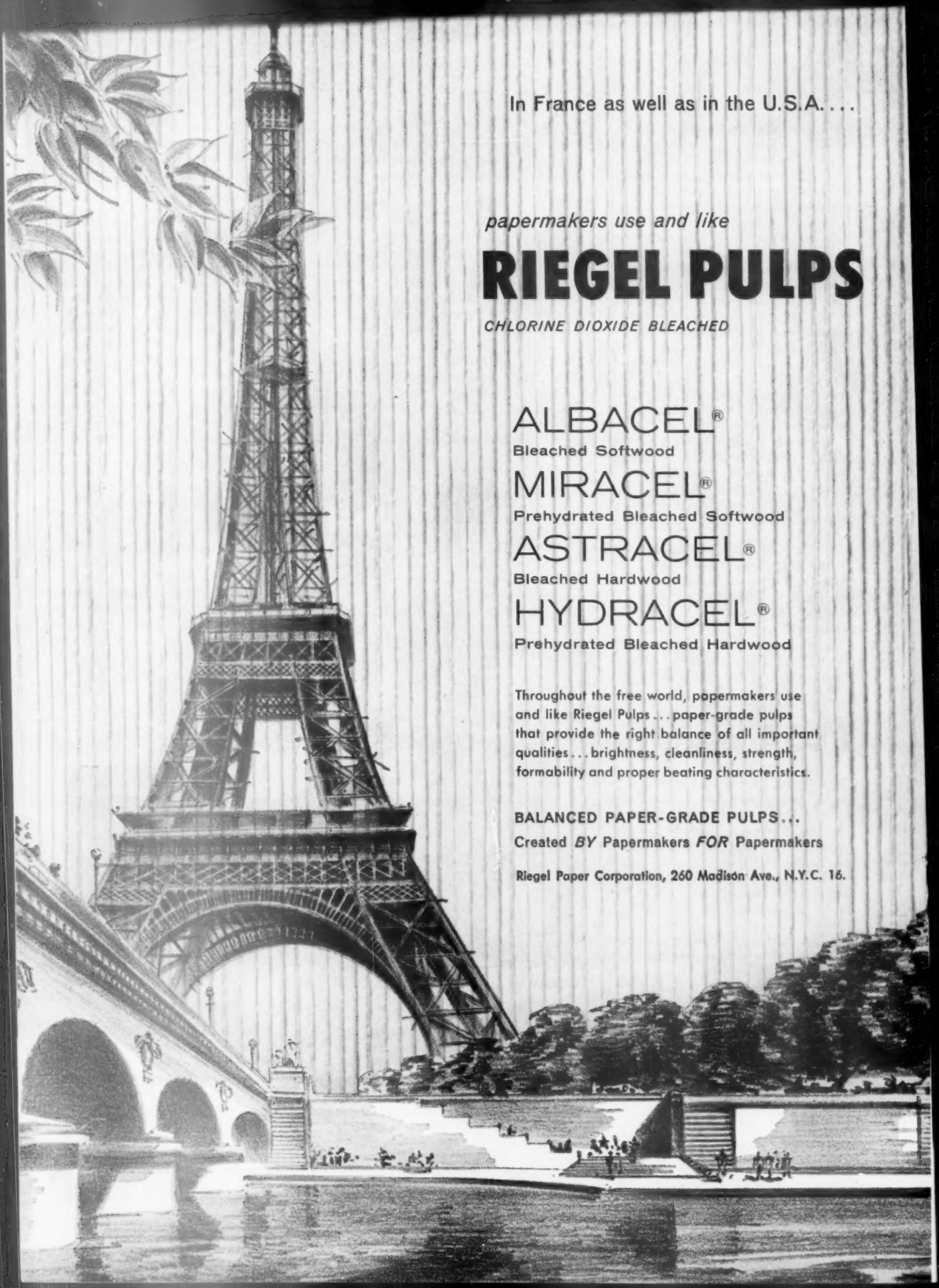
OWENS

MASON

Mr. Owens said that the survey-forecast was required by Congressional action and it is understood the time limit is 12 months. Presumably, it will be "ammunition" for whatever actions Congress may take which affect this industry.

This conference in the McGraw-Hill directors' room was attended by editors from more than 40 business publications. A team of seven top executives of the newly organized BDSA discussed their programs.

Co-chairmen of the meeting were



In France as well as in the U.S.A. . . .

papermakers use and like

RIEGEL PULPS

CHLORINE DIOXIDE BLEACHED

ALBACEL®
Bleached Softwood

MIRACEL®
Prehydrated Bleached Softwood

ASTRACEL®
Bleached Hardwood

HYDRACEL®
Prehydrated Bleached Hardwood

Throughout the free world, papermakers use and like Riegel Pulps . . . paper-grade pulps that provide the right balance of all important qualities . . . brightness, cleanliness, strength, formability and proper beating characteristics.

BALANCED PAPER-GRADE PULPS . . .
Created *BY* Papermakers *FOR* Papermakers

Riegel Paper Corporation, 260 Madison Ave., N.Y.C. 16.

Thomas E. Drumm, Jr., newly appointed BDSA Administrator, and Albert W. Wilson, editor of PULP & PAPER and chairman of the special events committee of the ABP editorial division.

Mr. Owens, just recently promoted to his new broader responsibilities, had been head of the forest products division of BDSA. This division continues under his direction.

Decisions have not yet been made as to the actual scope of the new survey and forecast. It may cover some world-wide aspects.

American pulp and paper companies will be called upon to contribute data, as they did in the 1957 survey.

A rough draft of the final results will be reviewed by a committee of pulp producers, and, separately, by a committee of pulp consumers. This follows the 1957 pattern.

In 1957, the Department of Commerce report included 97 statistical tables. Growth rates were estimated to 1965. Perhaps this new survey will project potentials to 1970 or 1975 or even farther.

The 1957 report included demand for paper, paperboard, pulp, pulpwood. The only world-wide data in 1957 was for newsprint. But the new report may be broader in world information.

Mr. Owens told the ABP editors the Department of Commerce meets every quarter with leaders of the pulp and paper industry.

He said the pulp and paper industry is "making a real world trade effort—not just to take up the slack of overproduction domestically and it is not a temporary effort."

Mr. Drumm told the editors that the BDSA position on business issues carries weight with the government. Any industry or business can inquire as to commodities and will usually get the right answers, he said. ■

Study says industry profits declined

NEW YORK—The composite sales record for 53 pulp and paper companies of the United States for interim periods reported during 1961 shows a decline of 1.2% as compared with similar periods of the previous year.

Net profits showed a decline of 14.2% for the same 53 companies.

These were figures reported by C. Lester Horn, business consultant of 120 Broadway, New York.

However, Mr. Horn's report showed 23 of the 53 companies had increased sales in their partial 1961 reports. Sixteen of the 53 showed increases in net profits. The ratio of net profits to sales for all 53 companies was 5.5 percent.

Brown Co. moves offices to New York

BOSTON, MASS.—Executives and sales offices of Brown Co. have been moved to New York City. Explains President Leonard A. Pierce, "The decision stems from increased development of the company as a national concern." Brown now has plants in Swanton, Ohio, Corvallis, Oregon, Birmingham, Ala., and has just announced it will build a fiber pipe plant near Camden, N.J.

A regional sales office will be maintained in Boston, says Mr. Pierce.

Great Northern Paper moves N.Y. offices

NEW YORK—Great Northern Paper Co. has moved its New York sales offices from 342 Madison Avenue to the newly completed Morgan Guaranty Trust Building, 522 Fifth Ave., New York 36. The company will occupy the entire 19th floor under a 15 year lease.

Richard G. Croft, chairman of the board, and Robert A. Haak, vice president, sales, already have offices here in the city.

Joining them will be Peter S. Paine, senior vice president and Robert Hellendale, corporate clerk.

Wausau doubles fine paper production

BROKAW, WIS.—A two-front multimillion dollar expansion program has just been completed here at Wausau Paper Mills Co. Primary purpose has been to increase fine paper production from 125 tpd to 235 tpd to meet increased demands for its sulfite papers.

Wausau produces genuine watermarked and unwatermarked bonds, mimeo bonds, duplicator papers, opaque offset, text and coverweight, index bristols, ledgers and specialty and converting grades.

The increase in capacity stems from the installation and start up of a Beloit paper machine named, "The D. B. Smith—110." (After President David B. Smith). Step two has been the building of a new finishing, assembly and shipping plant which triples previous facilities.

A major role in planning and execution of the program was played by Wausau's engineering, production and maintenance staffs. Chief project engineer was Warren A. Johnson. S. J. Baisch Associates were consulting engineers and C. R. Meyers and Sons Co, were general contractors.

Wausau, an independently owned mill, is completely integrated The company uses hardwoods extensively for sulfite pulping, attributes this to the fact that it has been successful in commercially using the Magnefite cooking process for the past three years.

The new paper machine started up on May 22 and now is in full production. Designed for speeds from 300 to 1,500 fpm, the machine has a daily production range from 75 to 110 tons.

The air-cushioned controlled flow headbox has three perforated driven rectifier rolls and a revolving white water shower. The removable Fourdrinier section is 42.5 ft. from breast roll to suction couch and has a 124 in. wide by 95 ft. long wire with a level wire run. The table rolls are fiber glass covered.

The press section has three main presses: a straight through suction press a reverse-suction press and a smoothing press. A horizontal size press is between the second and after-dryer sections. The forty 48 in. dia. dryer section has openside insulated aluminum-paneled hoods.

Each section of the machine is

When it gets too hot for ordinary coatings . . .

SPECIFY PITT CHEM X-201

If you're faced with a corrosion problem that's compounded with a high-temperature condition . . . solve it *permanently* and *fast* with Pitt Chem X-201.

This high-temperature mastic, a combination of selected asphaltic bases and inert mineral fillers is specially formulated to withstand temperatures up to 400°F continuous service. Although X-201 remains permanently plastic, it does not sag or drip.

Pitt Chem X-201 is *solvent-free*. It provides maximum assurance against fire hazard and eliminates shrinkage. Surfaces coated with X-201 are ready for service *immediately* upon completion of application.

Pitt Chem X-201 High-Temperature Mastic has been used extensively to protect chimneys subjected to most severe corrosive conditions. It is also used between insulation such as Foamglas, on hot uninsulated pipe flanges and in areas where similar "hot" corrosive conditions are encountered. Contact your local Pitt Chem Industrial Distributor, he's listed in the Yellow Pages. Let him give you complete information on Pitt Chem X-201 and the Pitt Chem Industrial Coatings Systems.

3308

***PITT CHEM "Insul-Mastic"® Gilsonite-Asphalt Coatings**
***PITT CHEM "Tarset"® Coal Tar-Epoxy Resin Coatings**
***PITT CHEM "Tarmastic"® Coal Tar Coatings**

PROTECTIVE COATINGS DIVISION

PITTSBURGH CHEMICAL CO.

GRANT BUILDING PITTSBURGH 19, PA.

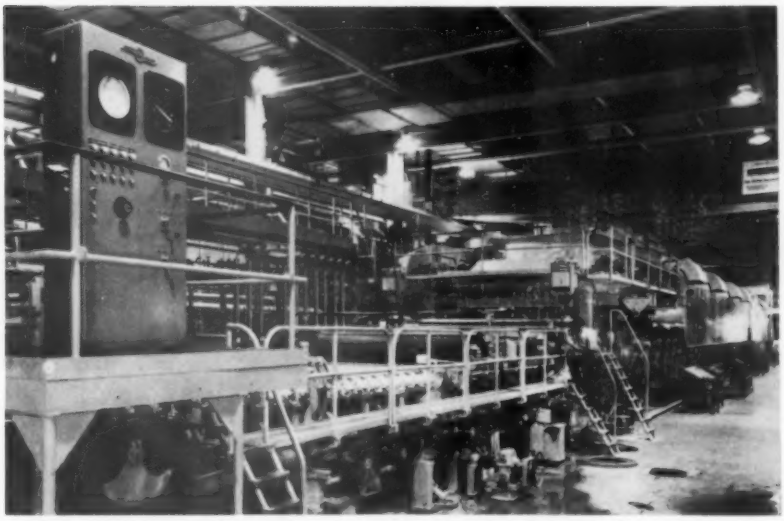
A Subsidiary of PITTSBURGH COKE & CHEMICAL CO.

driven through enclosed hypoid gear units which are belt driven from a line shaft connected to a 600 hp steam turbine.

A new 350 psig package boiler with 50,000 lbs. capacity steam/hour has been added to steam generating facilities.

The 100,000 sq. ft. finishing assembly and shipping two-story building adjoins the existing 60,000 sq. ft. area for those operations. With this addition, the flow has been revamped. Rewinders, roll wrapping, assembly and shipping are centered on the first floor of the original building along with storage for master size stock rolls. Sheeting and embossing are on the second floor. Two new high speed sheeters, each with dual backstands, have been added. Data-processing, sample department and enlarged printing department are also in this area.

The customer service department is on the first floor of the new building for prompt servicing of small and special orders. An integral part of this is a large area for storage of master size sheets. On the second floor are relocated trimmers, skid and automatic ream wrapping, carton packaging and mill stock inventory.



IN FULL PRODUCTION at Wausau Paper Mills Co. is this new 124 in. paper machine making sulfite bonds and specialty papers.

As a result of this expansion and revamping of its production flow, Wausau has complete facilities for inside loading of 11 freight cars and weather-protected docking facilities for 17 semi-trailer trucks. ■

Bathurst capital change stirs speculation

MONTREAL—The industry is speculating about the meaning of extensive capital changes being made by Bathurst Power & Paper Co. Some believe the company is either planning an important expansion or a takeover by some other larger corporation for more information, (PULP & PAPER, Sept. 18, p. 5).

The new financial setup, it is pointed out, would make it easier for Bathurst to acquire other companies. Reports of a possible change in ownership have been in circulation for some time. Nesbitt, Thomason & Co., Montreal and Toronto investment house, and its associates, are said now to be in control of the company.

Proposed capital changes in Bathurst involve both classes of stock. Currently outstanding are 400,000 Class A and 325 Class B shares. To buy majority control, just over 325,000 new common shares would have to be purchased and at current market levels this would amount to about $5,400,000.

Bathurst Power & Paper Co., was incorporated in 1928 when the assets of the old Bathurst Co. operating since 1907 were taken over. Its mills are at Bathurst, New Brunswick. Principal products are kraft linerboard, boxboard, pulpboard and groundwood pulp. Its kraft pulp mill has a capacity of 260 tpd. R. L. Weldon is chairman of the board; R. A. Irwin, president. ■

Pulp mill considered for Prince George

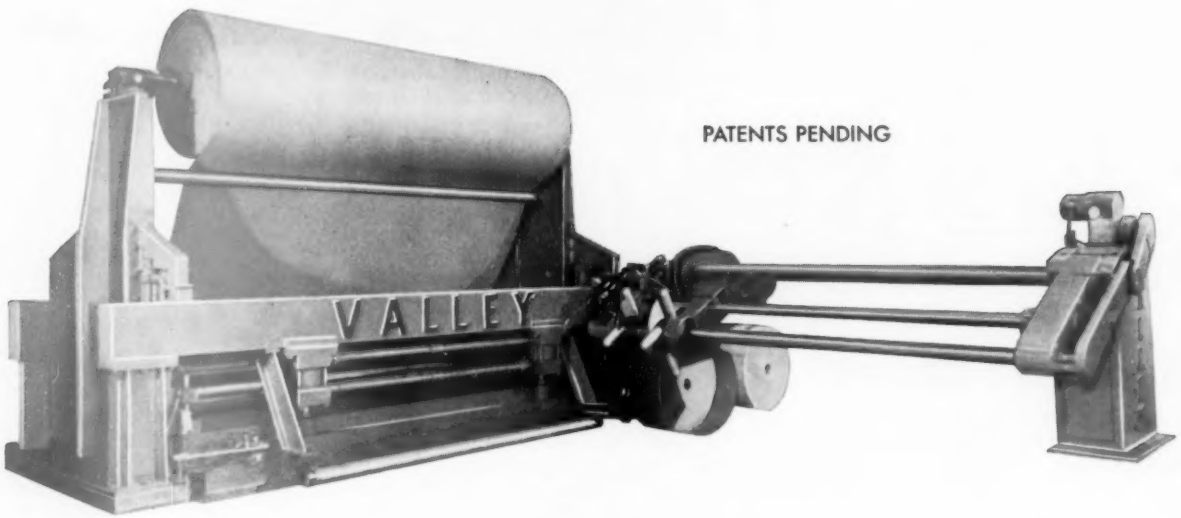
VANCOUVER, B.C.—Having decided against building a pulp mill in Alberta, Canadian Forest Products, Ltd., is seriously considering the Prince George area in this province (PULP & PAPER, Sept. 4, p. 15, Sept. 18, p. 5).

"It's still too early to say how interested we are or when we might start construction should the final decision be favorable," a company executive told PULP & PAPER. "But we are studying the situation, particularly from the standpoint of pulpwood availability."

Vancouver-based Canadian Forest Products, whose pulp manufacturing is concentrated at Port Mellon, 25 miles north of here on Howe Sound, can count on the full support of the British Columbia government should it go ahead with a mill at Prince George. Special legislation was passed in the provincial legislature a few months ago facilitating the supply of pulpwood for a prospective mill from scores of independent sawmill and logging operators in the area. The government's aim: to insure guaranteed long-term pulpwood requirements so that central B.C., with its extensive forests and strategic location, may share in Western Canada's pulp-paper industry.

The government's takeover of the B.C. Electric Co. and decision to go ahead with the Peace River power project at a cost of $600,000,000 have given new emphasis to in-

NEW and REVOLUTIONARY



PATENTS PENDING

wraps smoothly . . . faster . . .
with minimum supervision . . . in
smaller floor area . . . at lower cost

Each phase of automatic time cycle can be individually activated by turning control console selector switch to manual, and pressing individual operation pushbutton mounted on the console board.

. . . ROLL-WRAPPING SYSTEM

wraps a roll AUTOMATICALLY in less than 1 minute!

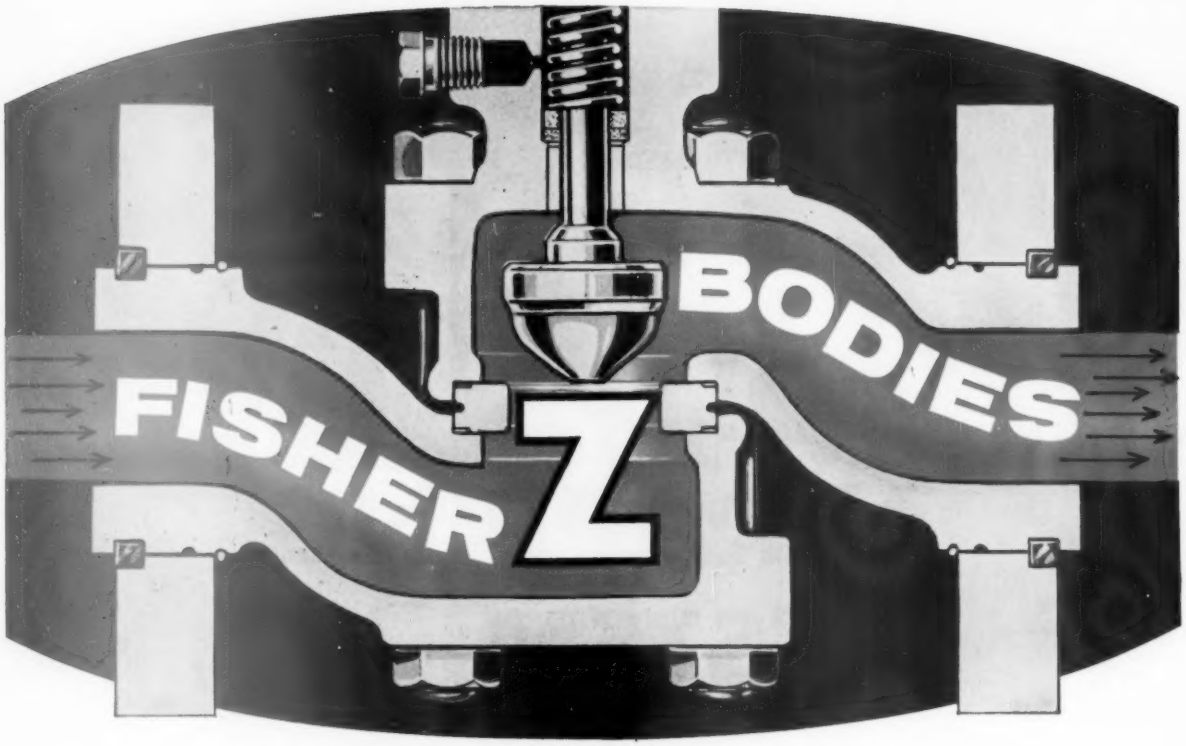
ANOTHER VALLEY FIRST! Now . . . a completely automatic, flexible *right angle* packaging system. Cuts wrapping paper to required size without manual settings, wraps and crimps ends ready for gluing on headers (Can be varied to use inner heads only — combination of inner and outer heads — or an outer head only). Wraps single or multiple ply including vapor seals. Unique console-control system shown will wrap paper rolls of varying sizes, one after the other in face lengths of from 7″ to 112″, and 15″ to 42″ diameters (These are *not* limiting dimensions). Crimper head makes hard, firm, uniform pleat for tight packaging, thereby assuring ultimate consumer of a superior product from your mill. Space-saving system includes conveyors, roll wrapping machinery, glue system, roll headers, scales, crimpers, dispensers and cutters, and lowering devices. Eliminates need for expensive trimming machines, unsightly glue pots, and other inconveniences common to normal wrapping methods.

VALLEY

INQUIRIES CONCERNING SPECIFIC ROLL PACKAGING NEEDS INVITED . . .

by VALLEY IRON WORKS CORPORATION

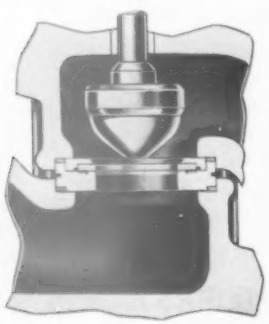
APPLETON, WISCONSIN
subsidiary of Allis-Chalmers Manufacturing Company
West Coast Representative:
E. A. Berry, P.O. Box 958, Longview, Washington
Canadian Representatives:
Pulp and Paper Mill Accessories Ltd., P.O. Box 850
Saint Laurent, Montreal 9, P.Q. Canada



Can solve many of your application problems...

● Available in any castable alloy such as stainless, Hastelloy or steel ● Supplied with diaphragm or piston type actuator ● Metal seat ring is reversible ● Available in wide range of inner valve styles or orifice sizes ● "Z" body can be turned 90 degrees to reduce piping costs ● Body halves sealed with Teflon gaskets ● Flanges integral or separable ● Separable flanges permit interchanging flange ratings on a given body ● Sizes: ½" to 6". Fisher Governor Company, Marshalltown, Iowa. Plants in Woodstock, Ont., Rochester, England. Butterfly Valve Division: Continental Equipment Co., Coraopolis, Pa.

TEFLON SEAT RING
Seat ring can also be supplied with Teflon insert to provide tight shut-off. This design permits using any style inner valve desired.



If it flows through pipe anywhere in the world ...chances are it's controlled by.....

FISHER® Controls SINCE 1880

dustrial development in the Prince George and northern sections of the province.

Canadian Forest Products, the only remaining big "independent" in B.C.'s forest industry, has extensive sawmill and plywood operations, mostly within a 50-mile radius of Vancouver. When the expansion-minded company considered Alberta, where it already operates a large plywood plant, for increased activity it was mainly because B.C., with far-spread tree farm licenses, did not appear to have the timber desired. The provincial government has been trying to prove otherwise. Government, as well as company foresters, have been surveying British Columbia's Prince George area for some time, checking on pulpwood potentials. ■

M&O details improvement program

INTERNATIONAL FALLS, MINN.—"Continuing plant development becomes increasingly important under market circumstances as intensely competitive as they are today," explains President Robert Faegre, Minnesota and Ontario Paper Co.

Several current projects in M&O's three paper mills have been undertaken, he explains mostly "for direct competitive pressures." At Kenora, the need for chip packing and acid circulation facilities was primarily dictated by newspaper publisher insistence upon better newsprint performance on high speed printing presses and this calls for higher quality sulfite pulp, said Mr. Faegre.

New pulp screening and cleaning facilities were installed at the Fort Frances mill for basically the same reason. At International Falls, the second stage hydrosulfite system now being added to the bleach plant will help M&O maintain its position in the highly competitive sulfite specialty papers market.

The Fort Frances mill's finishing room, warehouse and shop area have been extended for greater production efficiency, reduced operating costs and improved customer service. New paper winding facilities were also added. The No. 7 newsprint machine at Fort Frances has also been equipped to make colored newsprint. ■

Increased demand spurs expansion tempo

NEW YORK—Encouraged by the sharp recovery in the economy and bolstered by the subsequent upswing in demand for its products, the paper industry is expanding again. Although the tempo is not as furious as previous postwar expansions, there definitely has been a decided increase in orders for new machines, launchings of improvement programs and possibilities for new mills.

As one mill manager explains it, "The decision to spend money on new or rebuilt machines—any form of capital expenditure—has to be weighed carefully by each mill management on the merits of each individual case. We have to look at the overall picture naturally, but we also have to assess for ourselves what each of our competitors is doing and what we can do to match them or stay ahead. You can't stand still. You either go ahead or you're dead."

This partly explains why, once operating rates have improved, mills that have seemingly been waiting for the right moment are now once again adding a new machine or improving existing machines. Since the economic weather is predicted to be fair and clear for the first six months of 1962, many mills are being encouraged, now that their machines are operating in the 90% range, to start thinking of expanding. ■

Ninth machine cut in at Longview Fibre

LONGVIEW, WASH.—A new 184-in. Fourdrinier machine is now on stream here at Longview Fibre Co. Designed to produce lightweight paper and corrugating medium in the 125-150 tpd range at speeds up to 1,600 fpm, the machine now brings the mill's rated capacity to around 1,350 tons.

This Beloit machine has table rolls and return wire rolls built of fiberglass, multiple inlet using small diameter feed pipes for improved stock distribution, a Flo-Vac operating in conjunction with 4 suction boxes ahead of couch roll. There are 2 suction presses, a 2-section dryer with 42 dryer rolls. These include 17 first-section rolls, 14 in second, 10 felt dryers, 1 marking dryer—all 5 ft. diam. and designed for 160 psi steam.

The first top dryer of second section has a J. O. Ross high-velocity gas-fired hood with moisture-streak correction controls. Other features of No. 9 include a temperature-differential moisture detection unit designed and built by Longview Fibre, and Accuray basis weight measurement. Three refiners process stock for this machine, two Jones double-disc and a Bauer 440 single-disc.

The machine start-up involved producing semi-chemical 9 point at 500 fpm. Within less than 2 weeks the 9 point production rate increased to 670 and has since been upped to 700 fpm.

Subsequent to putting No. 9 in operation, Longview Fibre closed down its No. 4 machine for rebuilding. This cylinder machine is now being modernized and converted to Fourdrinier type. ■

Georgia-Pacific building multiwall bag plant

TOLEDO, ORE.—Georgia-Pacific Paper Co. will have a "well-rounded paper converting program," states President Robert E. Floweree, when the company enters the multi-wall paper bag field early next year. At that time facilities will be completed next to G-P's pulp-paperboard mill here in Toledo. Initial production in the 35,000 sq. ft. automated plant will be primarily for the Pacific Northwest area.

G-P plants now operating in the paper container field are at Olympia, Wash., Monticello, Iowa, Millbrae,

Which coating suits you best? There's

a DOW COATING to fit almost any paper need!

Among the many fine Dow products, you'll find paper and boxboard coatings for almost every application. Here is a partial list of the Dow products which serve the pulp and paper industry:

NEW DOW LATEX 630 . . . Coatings made from this styrene-butadiene latex offer demonstrably superior pick resistance, excellent mechanical stability and starch compatibility. Dow Latex 630 will produce a smoother, more uniform paper surface, providing maximum printability. Both type and half-tone reproductions will be sharp and clear, with a minimum of production problems.

DOW SARAN RESINS . . . For highly protective coatings offering reduced moisture vapor transmission and permeability to gases, and improved grease and oil resistance, select Dow saran resins. They can upgrade packaging films, paper and paperboard for use in many new applications.

SARAN LATEX F-122 . . . This aqueous solution of saran dries to form a continuous, tough, glossy film with high resistance to chemicals and water. Use it for decorative coatings and book bindings.

DOW POLYETHYLENE . . . A wide range of resins is available for extrusion coating and lamination of paper, paperboard and flexible packaging webs. They offer excellent gloss and heat sealing properties, as well as good water vapor, water and chemical resistance. Flexibility is maintained at low temperatures.

ETHOCEL® . . . This organo-soluble cellulose plastic is compatible with many waxes, resins and plasticizers. Coatings made of Ethocel are noted for heat stability and for solubility in low cost solvents.

To solve your coatings problems, call on Dow. You'll find not only a wide selection of products, but experienced technical assistance in their use. For information, write us in Midland, Coatings Sales Department 1932JJ10-2.

THE DOW CHEMICAL COMPANY DOW Midland, Michigan

YARWAY news briefs

from **Yarnall-Waring Company,** *Philadelphia 18, Pa.*

BRANCH OFFICES IN 19 UNITED STATES CITIES • SALES REPRESENTATIVES THROUGHOUT THE WORLD

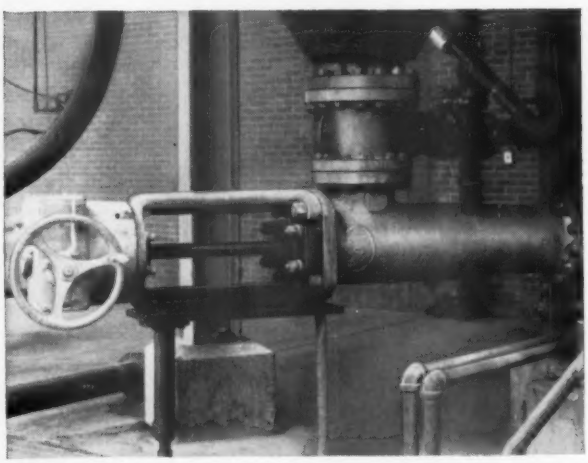
HOW TO RAISE PULP PRODUCTION... AND LOWER DIGESTER OPERATING COSTS

YARWAY DIGESTER BLOW VALVES have demonstrated in scores of mills how they can improve the profit picture *two ways*—by *raising production* and *lowering costs.*

Yarway's famous seatless sliding plunger design *provides up to 100% greater discharge area* over many other digester valves of same nominal pipe size. This gives

1. FASTER DISCHARGE
2. REDUCED BLOWING TIME
3. LOWER PRESSURE DROP

Coupled with CLEANER BLOW and TIGHTER SEAL, it all adds up to MORE COOKS PER DAY, GREATER OUTPUT OF PULP.

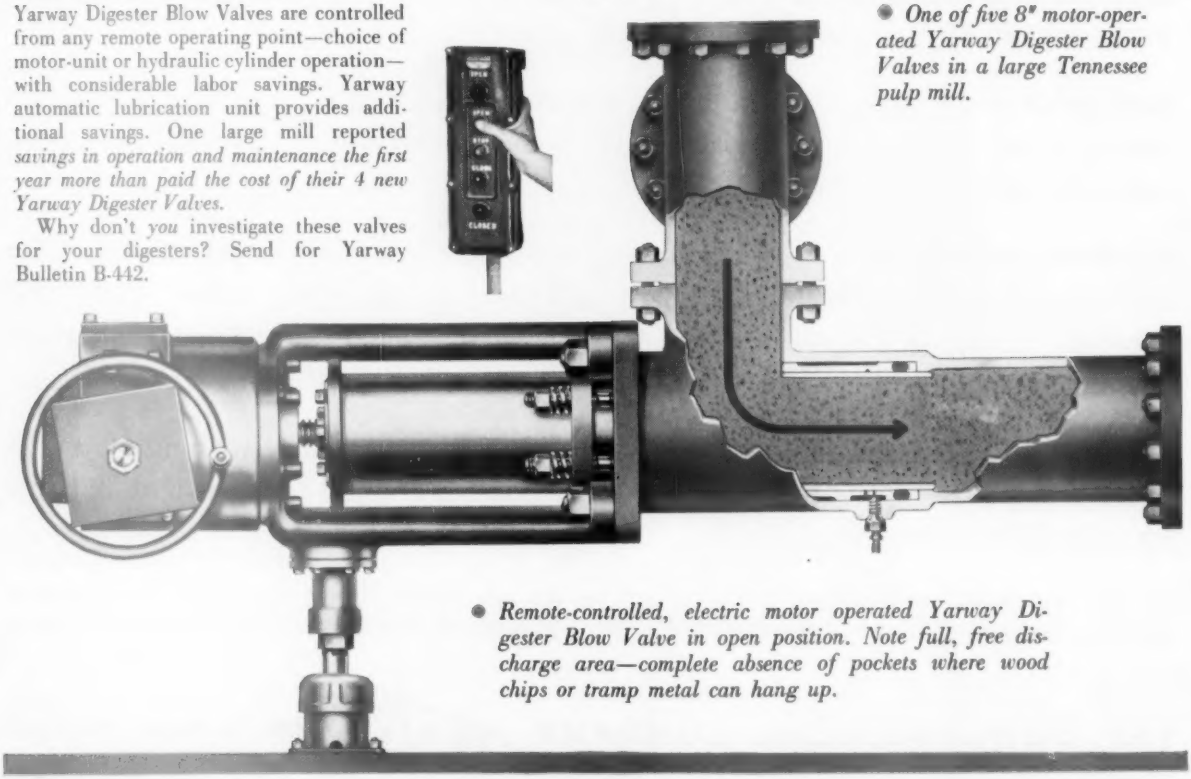


● *One of five 8" motor-operated Yarway Digester Blow Valves in a large Tennessee pulp mill.*

REMOTE CONTROL

Yarway Digester Blow Valves are controlled from any remote operating point—choice of motor-unit or hydraulic cylinder operation—with considerable labor savings. Yarway automatic lubrication unit provides additional savings. One large mill reported *savings in operation and maintenance the first year more than paid the cost of their 4 new Yarway Digester Valves.*

Why don't *you* investigate these valves for your digesters? Send for Yarway Bulletin B-442.



● *Remote-controlled, electric motor operated Yarway Digester Blow Valve in open position. Note full, free discharge area—complete absence of pockets where wood chips or tramp metal can hang up.*

Buena Park and Modesto, Calif. Only recently the company announced an agreement to buy Imperial Bag & Paper Co. and Fleetwood Paper Co., both of Chicago.

Strathmore Paper rebuilds its No. 6 machine

WORONOCO, MASS.—When completed, improvements on Strathmore Paper Co's. No. 6 machine will have a longer wire (from 50 ft. to 75 ft.), higher speed (from present 500 fpm to 750 fpm) and 23 new dryers. Improvements are also being made in stock preparation for No. 6 machine which makes bond, blueprint, tracing, diazo and photographic base papers. The rebuilt machine will be 60 ft. longer than before, will now extend 250 ft.

Manchester Machine Co. designed and built the new machinery according to Strathmore specifications.

When completed, Strathmore will have spent almost $10 million since 1953 on modernization of plant and production facilities at its four locations. Almost $2.5 million will have been spent on the No. 2 mill.

Fox Paper boosts output by rebuilding machine

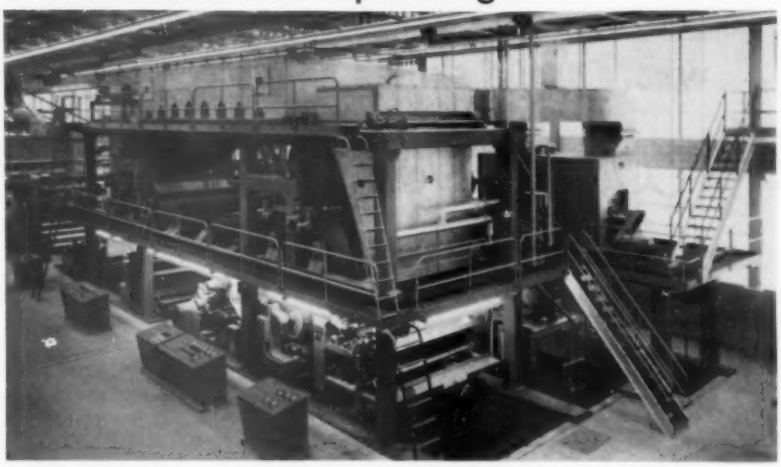
CINCINNATI, OHIO—An increase from 45 tpd to 100 tpd has been realized by Fox Paper Co's. Lockland Cincinnati mill with the rebuilding of its No. 4 paper machine. The Fourdrinier machine trims 124 in., produces kraft wrapping, converting and bag paper in the 30 to 90 lb. range for garment, millinery and other uses.

Major changes included two air-loaded section presses, felt stretchers, felt conditioners, felt rolls, and a motorized broke conveyor for the first press. New drive equipment included totally enclosed Black-Clawson drive stands with air clutches for couch, presses, pre-dryers, Yankee dryers, after dryers, calender and reel. The couch also has an inching drive with brake assemblies for the three dryer drives and a reverse unit for the calender. A new line shaft completes the first stage of the rebuild.

Twelve dryers were ground for improved paper contact and the bearings reworked. Three new dryers were added, designed for 125 psi operating steam pressure.

Black-Clawson's paper machine division engineered this first phase of the rebuild, supplied new equipment and supervised installation. ■

Blade coater now operating



OFF-MACHINE BLADE COATER at Newton Falls Paper Mill, Inc., Newton Falls, New York is now in operation. The Flexiblade coater, built by Dilts Div. of The Black-Clawson Co. can coat up to a 114 in. web. Flying paster is in center, followed by first blade, then air knife. High velocity and medium velocity drying are provided. Second blade coater is toward left end of machine.

Fox River merger accelerates growth plans

APPLETON, WIS.—The news that Outagamie Corp. will purchase Fox River Paper Corp. here in Appleton, means that Fox River's long range plans for expansion can now proceed at an accelerated pace with the backing of the resources of Outagamie, says Fox River's President William Roberts.

Outagamie is a holding company with substantial investments in companies in the Fox River valley. The corporation is owned by stockholders most of whom live in this area.

All Fox River personnel will continue with the new Fox River Paper Corp. Officers will be William Roberts, president and general mgr.; H. P. Dixson, vice pres.; H. O. Barney, secretary and treasurer; and Esther R. Small, asst. secretary.

The acquisition of Fox River will permit Outagamie's associated companies to make best possible use of combined facilities of the group—the largest employer in Appleton.

The Telulah mill, Fox River Paper's manufacturing division, has been completely rebuilt since 1947. A new finishing department and warehousing facility are planned here.

The Fox River mill specializes in technical papers, such as blueprint, diazo base stock and tracing. ■

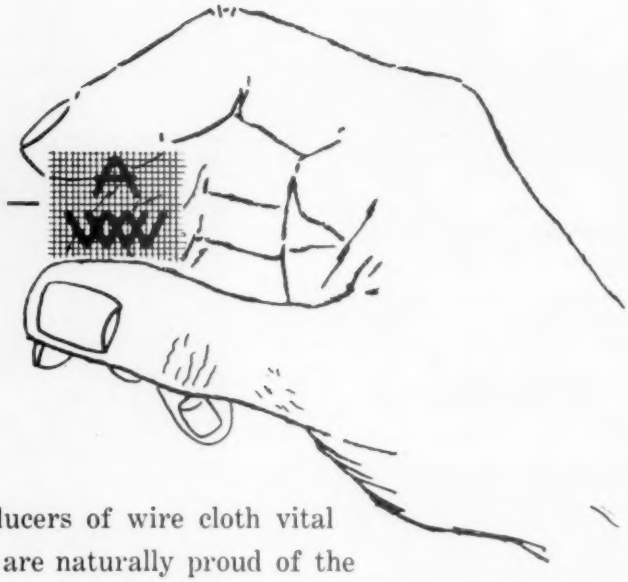
G-P buys two bag plants in Chicago

PORTLAND, ORE.—Georgia-Pacific Paper Co. makes its first venture into the bag making field with purchase of Imperial Bag & Paper Co. and Fleetwood Paper Co., both of Georgia.

Imperial makes a full line of grocery bags and sacks on seven machines. Its sales subsidiary, Imperial Bag & Paper Sales Co., included in the purchase, and Fleetwood Paper, a jobber, market Imperial's bags in the Midwest and East.

where proud, skilled hands —

Work Wonders With Wire!

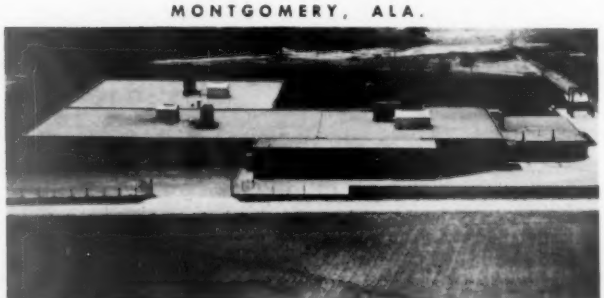


As the world's largest producers of wire cloth vital to the paper industry, we are naturally proud of the industry's acceptance of this superior product. We sincerely believe, however, that much of the acclaim attributed to our product must be shared with those conscientious craftsmen within our organization who constantly strive to make our product better . . . who for more than 60 years have dedicated their efforts to assure all concerned that — "Appleton Wires Are Good Wires"!

APPLETON WIRE WORKS, Corp.

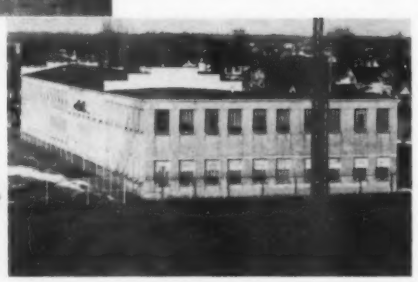
Plants at Appleton, Wis. and Montgomery, Ala.: International Wire Works, Menasha, Wis. An Affiliated Company

MONTGOMERY, ALA.



APPLETON, WIS.

INTERNATIONAL WIRE WORKS - MENASHA, WIS. AN AFFILIATED COMPANY



. . . . . MERGERS

Crown-Zellerbach buys paper distributor

VANCOUVER, B. C.—Crown Zellerbach of Canada has acquired Collison Paper Co., a paper distributor which has long operated in Victoria and Vancouver.

Clifford S. Collison, president and son of the founder, remains with the company in his present capacity.

Mead acquires two boxboard container plants

DAYTON, OHIO—The Mead Corp. has acquired two Iowa boxboard container makers through a stock exchange. Waterloo Container Corp., Waterloo, and Fort Dodge Container Corp., Fort Dodge, will be operated as subsidiaries. Cost of the acquisition is estimated at more than $1 million.

Rhodes controls Philadelphia Card

PHILADELPHIA, PA.—Rhodes Paper Co. has gained controlling interest in the Philadelphia Card & Paper Co. Both companies are fine paper merchants, distributors of fine printing and specialty papers throughout the Delaware Valley area. They will operate as separate corporations.

. . . PUBLIC RELATIONS

"Hardly anyone talks about paper"

NEW YORK—In what was apparently a last minute switch in his subject matter, H. E. Whitaker, chairman of the board, The Mead Corp. and president of the American Paper & Pulp Assn., decided to talk about public relations. Actually, the 60 members of the Metropolitan District of Empire State Section of TAPPI had expected Mr. Whitaker to discuss how management looks at research.

The seriousness with which Mr. Whitaker spoke left no doubt in the minds of his audience that public relations was uppermost on his mind. "These are pretty serious times," he began, "serious for our country and for our industry. People talk about cars, steel, electronics, oil, chemica's and plastics. Hardly anyone talks about paper. People are so used to paper, they take it for granted—like water and air.

"This is not good," he explained. "The industry doesn't attract enough of the best men in the nation's schools." Mr. Whitaker did hasten to add that the industry does have top men, but it doesn't have its choice of the best men coming out of school.

Another problem he stressed is that the paper industry doesn't have a strong standing in the investment market. Still another and possibly more important is that the industry is not strong with its public. "It is considered a nuisance industry. Our plants have a bad odor," he said.

"They say we are using up the forests. We are really a long way off from where we would like to be with our public. We have a negative image. The problem is, what can we do about it. We are doing something, but we need help. You gentlemen in the technical association are always moving around, talking to people, etc. We need your help."

Possibilities are many

to improve the industry's image, he said, but another problem is how to prove to people that this is an exciting industry. Remarkable gains have been made, he cited, as to what can be done on an acre of land. Thousands of foresters are changing the face of America. Today, Georgia timberlands are producing more revenue than is agriculture. "How can we get the public to appreciate this industry in its proper perspective?" he asked.

Some suggestions by Mr. Whitaker: "Talk more about the industry and the benefits we provide in the general economy. Very few people outside the industry have any idea of what goes on in making paper and our relationship to the general economy. Also, eliminate all negative factors in the public mind such as stream pollution. One example: What is being done, company by company, to eliminate pollution. It will cost money, but it must be done."

There is a real story to be told about the basic sciences, and it is fascinating, said Mead's chairman. "The interests of scientists must be rekindled in papermaking. It will take patience and time and many voices."

Few of the people in the audience realized that some of Mr. Whitaker's concern stemmed primarily from the fact that in mid-October, the board of governors of APPA will discuss the recent survey on the industry's public relations image (PULP & PAPER, July 10, page 21). An industry-wide program has been suggested, which would cost more than $200,000 a year. This, in serious discussion, will be reviewed by APPA leaders. ■

. . . . . SAFETY

Safety goal: eliminate all injuries

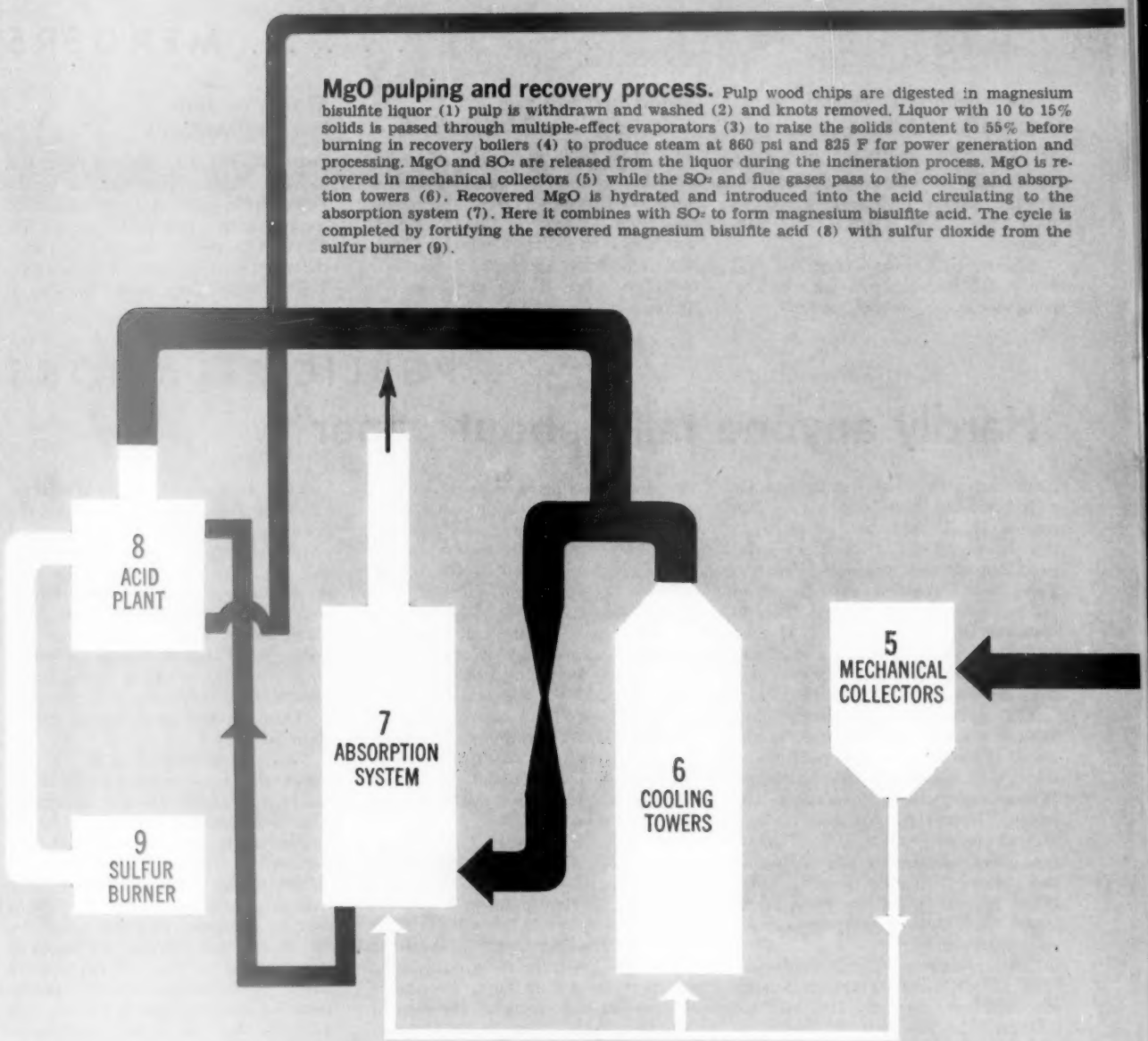
WEST LINN, ORE.—Eliminating all first aid injuries is extremely important in eliminating major injuries, stresses John Moak, plant engineer, Crown Zellerbach Corp.'s West Linn division. Before zero frequency can be achieved, he says, every workman must act and think safety.

"After my visit to the Columbia-Geneva Steel Mills at Pittsburg, Calif., I was convinced that the only way they have made their plant the safest place to work in this country was to almost completely eliminate the small injuries. If the finger isn't cut, it cannot be cut off. If a finger isn't cut, you cannot have an infection which could cause the loss of a finger.

"It is so important," he continues, "to eliminate the small injuries. It's like putting a magnifying glass on your whole safety program, because if you eliminate the first aid injuries, there will be no lost time injuries. If there are no lost time injuries, there will be no fatalities. Therefore, the goal of all safety programs should be to eliminate all injuries."

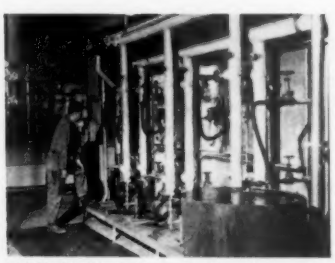
Mr. Moak stresses that there is only one way to accomplish the elimination of injuries and that is to keep safety before everybody at all times. When people are thinking of safety, he says, their chances of getting hurt are practically nil. The best way to keep safety before people is for every

MgO pulping and recovery process. Pulp wood chips are digested in magnesium bisulfite liquor (1) pulp is withdrawn and washed (2) and knots removed. Liquor with 10 to 15% solids is passed through multiple-effect evaporators (3) to raise the solids content to 55% before burning in recovery boilers (4) to produce steam at 860 psi and 825 F for power generation and processing. MgO and SO_2 are released from the liquor during the incineration process. MgO is recovered in mechanical collectors (5) while the SO_2 and flue gases pass to the cooling and absorption towers (6). Recovered MgO is hydrated and introduced into the acid circulating to the absorption system (7). Here it combines with SO_2 to form magnesium bisulfite acid. The cycle is completed by fortifying the recovered magnesium bisulfite acid (8) with sulfur dioxide from the sulfur burner (9).



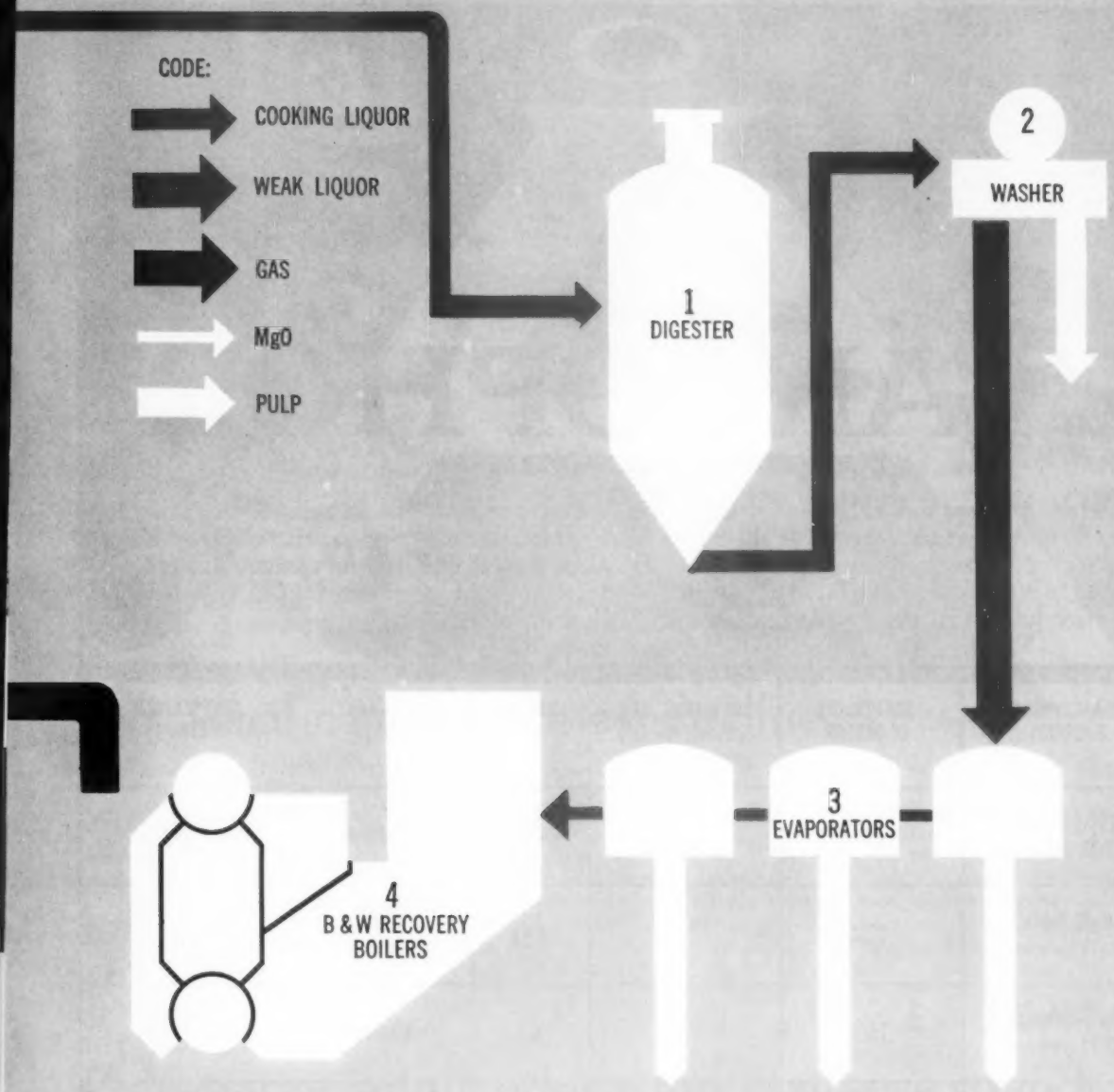
MgO process at Weyerhaeuser's Cosmopolis

Evaporators in series increase pulping liquor from less than 15% to about 55% solids to permit its burning.



B&W MgO recovery boilers burn the concentrated liquor, supplying 70% of the plant's steam requirements.

Mechanical collector reclaims MgO from furnace flue gas and washes it before further use.



Mill recovers 90% of spent liquor solids

Only 20 pounds of magnesium oxide and 40 pounds of sulfur per ton of unbleached pulp are needed for make-up at Weyerhaeuser Company's 400 ton per day sulfite mill at Cosmopolis, Washington.

The simple, closed cycle MgO pulping and recovery process, placed in operation during 1957, reclaims about 90% of the pulping chemicals. The B&W MgO recovery boilers provide 70% of the steam required for the entire plant's power generation and processing needs. A third B&W bark and oil fired boiler provides the balance of steam requirements.

The commercially-proven MgO pulping and recovery process is ideal for either new mills or conversion and modernization of existing mills. Shorter cooking time required for MgO pulping cuts capital and maintenance costs in new installations and permits increasing the production of existing mills. Quality sulfite pulp with high brightness and strength is produced.

For more information about the efficient MgO pulping and recovery process, contact your nearest B&W sales office or write The Babcock & Wilcox Company, Boiler Division, Barberton, Ohio. E-302-1001

Babcock & Wilcox

CONTROLLED
BRIGHTNESS WITH

BLANCOPHOR®

BRIGHTENERS

BLANCOPHOR optical brighteners bring you in on target as to results. The reliability of these products and the wide range in which they are offered allow you to meet just about every specification of reflectance and hue. Match Blancophor products to your process with the help of this chart. Then check the products you are interested in right on the coupon to secure literature and samples.

BLANCOPHOR PRODUCT	SOLUBILITY IN WATER	DAYLIGHT HUE greenest hue = 1 pinkest hue = 4	USE pH	EXHAUST RATE	APPLICATION METHOD
ES-31 (liquid) ES-73 (powder)	15%	3	4-4.5	Moderate	Beater or Size Press
HL-32 (liquid) HL-72 (powder)	10%	2	4-6.5	Moderate to Fast	Beater
HS-31 (liquid) HS-71 (powder)	15%	4	6-7	Moderate	Beater or Size Press
MS-31 (liquid) MS-72 (powder)	10%	1	4-5	Fast	Beater

gdc gaf

FROM RESEARCH TO REALITY

GENERAL DYESTUFF COMPANY
A DIVISION OF
GENERAL ANILINE & FILM CORPORATION
435 HUDSON STREET • NEW YORK 14, NEW YORK

SALES OFFICES: Charlotte • Chattanooga • Chicago • Los Angeles • New York
Philadelphia • Portland, Ore. • Providence • San Francisco
IN CANADA: Chemical Developments of Canada Ltd., Montreal

GENERAL DYESTUFF COMPANY
435 Hudson Street, New York 14, N. Y.

Gentlemen:

Please send me samples of the Blancophor products checked and pertinent literature.

☐ ES-31 ☐ ES-73 ☐ HL-32 ☐ HL-72 ☐ HS-31 ☐ HS-71 ☐ MS-31 ☐ MS-72

NAME_____

TITLE_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

Blancophor brighteners manufactured by General Aniline & Film Corporation are sold outside the United States, by distributors all over the world, under the trademark "Tinopal."®

. . . . . SAFETY

supervisor and every leadman to continually work hard on safety. Whenever there is a rash of first aid injuries, it's time to talk safety to every man under supervision, he states.

A new safety record has recently been achieved by employes at Crown Zellerbach's Camas (Wash) Div. The new safety record is of 2,132,209 man-hours without a disabling injury.

Everyone concerned was notified when the two million man-hour mark was made. Music sounded over loudspeakers; women active in departmental safety programs handed out copies of congratulatory telegrams; paychecks were issued one day early, and with each was a card bearing resident manager R. A. Butler's signature certifying the bearer was "a shareholder in the Crown Zellerbach Millionaires Club." ■

. . . . PULPWOOD MANAGEMENT

Bowaters hopes to save some burned land

CORNER BROOK, NFLD.—Bowaters anticipates salvaging more than half the wood in its burned-over areas here, according to Sir Eric Vansittart Bowater, chairman of the organization.

Early estimates after an aerial inspection indicated that 6% of the company's lands were burned. This is less than half the total area destroyed by fire during the driest summer in 19 years, it was reported. Only four inches of rain fell in Newfoundland during June, July and August. District average was 10⅝".

Sir Bowater said "After a normal fire we are usually able to salvage the bulk of the wood, which may be cut up to six years after the fire without loss of quality. In this case, due to the size of the burn and to the difficulty of access to some parts of the area involved we may have to be content with something less."

He said supply of wood will be adequate for full operation of the Corner Brook and United Kingdom mills. Extensive black spruce stands serving Bowater's Newfoundland Pulp and Paper Mills Ltd. have been ravaged by fire. ■

U.S. Pacific timber sales decline

PORTLAND, ORE.—Timber harvest and sales volumes for Pacific Northwest region 6 national forests in the fiscal year for 1961 were less than for the previous year according to J. Herbert Stone, regional forester, U.S.F.S., here in Portland. Sales from July 1, 1960 through June 30, 1961 totaled 3,812,000,000 board feet. The timber had a bid value of $73,843,000. The previous year's volume sold was 3,825,000,000 board feet with a bid value of $92,357,000.

Total volume of harvest was 3,577,000,000 board feet, about 600,000,000 less than the previous year's cut of 4,194,000,000. Mr. Stone attributes this lower cut to reduced needs of local industry during a period of low demand for lumber and plywood products. The number of sales totaled 2,674 compared to 2,210 for the previous year. Mr. Stone said this increase was due to an intensified small scale salvage program introduced in order to reduce losses from blowdowns and insects. ■

. . . . . EDUCATION

Pulp-paper adult education course expands

ADULT EDUCATION in forest products courses began last fall at Longview, Wash. It's expanding this year to develop a full 4-year college-university accredited course.

Longview, an outstanding forest products center, was founded as a lumber community. It now has several mills, including one of the world's largest sawmills, four pulp-paper mills with total capacity of around 2,500 tpd, plywood and particleboard plants in addition to specialty wood products manufacturing mills.

The Forest Products Technical Education Program consists of two divisions—pulp-paper and lumber-plywood. The Lower Columbia Junior College, at which the classes are held, administers the program. Qualified industry people serve as instructors.

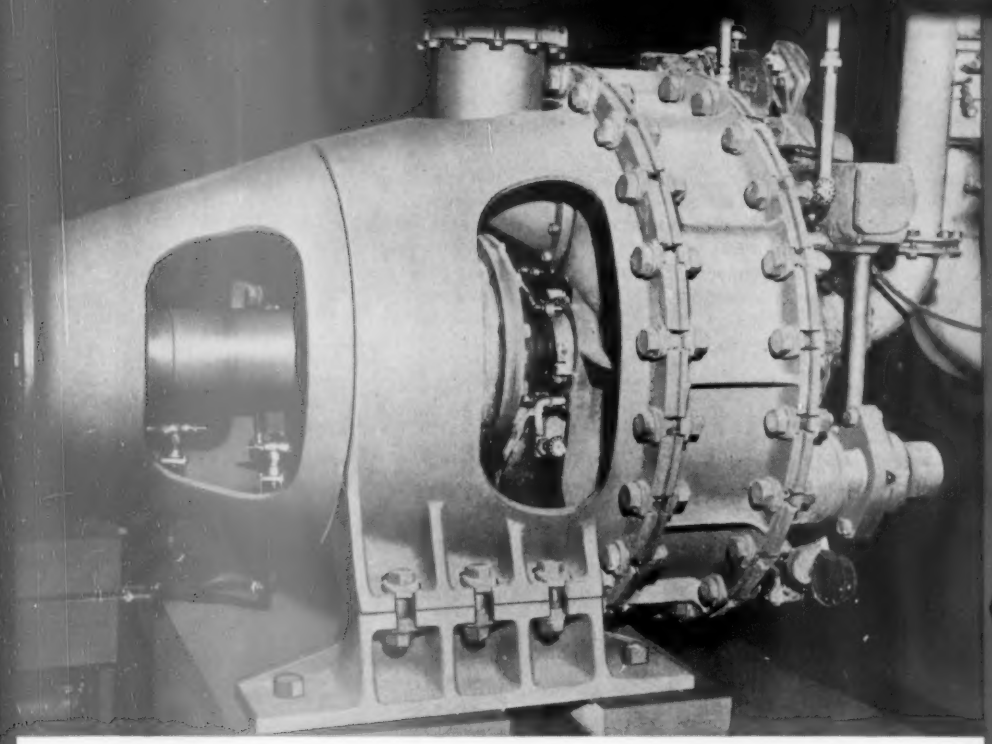
Success is such that at least two other junior colleges in the state anticipate setting up similar programs. Inquiries have been received from across the nation; the federal government is interested, and state representatives of Washington and Oregon have studied the Longview program.

The pulp-paper manufacturing courses are available to the industry's Longview employes. Last year 135 enrolled, attending a 3 hour class each week for 30 weeks. Four such classes (3 evening, 1 day) were provided to accommodate the enrollment.

Members of the advisory committee serving as the educational board are D. G. Felthous, special projects engineer, pulp and paperboard div., Weyerhaeuser Co., Richard Nimtz, chief chemist, R-W Paper Co., Bob Guide, technical dept., Longview Fibre Co., Harold Erdelbrook, Washington Pulp & Timber Co., and Robert McKee a member of the junior college staff.

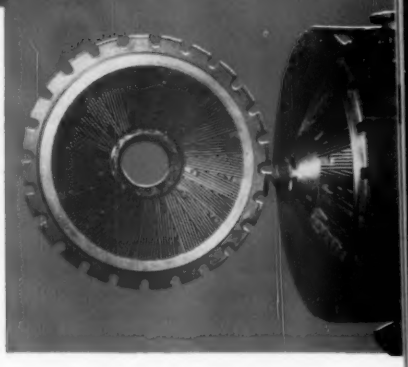
Student quota per mill is determined by the number of its total employes in relation to the community's total pulp-paper employment. A proportionate number of school enrollees is allowed each organization. Longview Fibre has the largest number of employes of the 4-mill group.

Subjects of the basic first-year curriculum range from forestry and logging through pulping procedures and papermaking to sales and distribution. Each of these phases of industry will be covered more intensively in the advanced courses. ■



Note semi-conical shape of stator and rotor which contributes to the self-aligning characteristic of the Disco-Finer. This drawing also illustrates the reverse flow self-pressurizing principle for refining.

Morden Disco-Finer as installed on the Number 8 paper machine, Longview Fibre Company.



LONGVIEW FIBRE SELECTS NEW MORDEN DISCO-FINER AFTER RIGID TESTS

Disco-Finer Performance Proves the Value of Semi-Conical, Self-Aligning Design . . . Leads to Permanent Installation by Longview Fibre Company

The first full-size production model of the Morden Disco-Finer was tested and evaluated by Longview Fibre Company, Longview, Washington, on its No. 8 paper machine. Since Disco-Finer was the only refining unit on No. 8, which was expected to produce between 40 and 70 tons of toweling and kraft grades of masking, wrapping, bag, spinning, twisting and crate liner, it was relatively easy to determine Disco-Finer productive capacity and quality of treatment.

An official of Longview Fibre summed it up this way: "Though we intend to use this machine at a maximum of 760 horsepower input, during the evaluation period the unit was run for long periods at 810 horsepower and over periods of several hours as high as 930 horsepower without any indication of bearings being overloaded.

"The self-aligning principle of the Morden Disco-Finer, as far as we are concerned, has proved its worth. The machine is extremely rigid and examination of fillings indicates very slight but uniform wear. It is indicated that the semi-conical design contributes to rigidity.

"Our tests show that the Disco-Finer is a rugged enough machine to stand up to the operating rigors of a paper mill and is well accepted by our papermakers.

"Since we were pleased with the results obtained from the Disco-Finer, the decision to retain it was obvious.

"With the Disco-Finer in action the paper machine itself enjoyed better operating conditions, and improved sheet quality resulted."

Although at Longview Fibre Company the Morden Disco-Finer is employed as a refiner, simple flow and filling changes adapt this versatile machine for defibering. In refining or defibering unusual uniformity of treatment is assured because filling plates are self-aligning. Semi-conical design eliminates any chance of warpage or distortion of the plates.

For complete information and specifications write:

MORDEN MACHINES COMPANY

3420 S. W. MACADAM AVENUE
PORTLAND 1, OREGON • CApitol 2-9355

Cellulose Sales names three to new posts

NEW YORK, N.Y.—Lawrence Kelly and Walter Lawrence have been elected vice presidents and Philip Kolm has been elected assistant treasurer of Cellulose Sales Co., here, according to Erik Goranson, company president.

Mr. Kelly, who joined the company in 1945, headed the traffic dept. prior to joining the sales dept. in 1951. Mr. Lawrence, a salesman of domestic and Scandinavian woodpulps for the past 20 years, joined Cellulose Sales in 1958. Mr. Kolm became assistant secretary in 1951. He began as an accountant with the company at its inception in 1938. ■

KELLY

LAWRENCE

KOLM

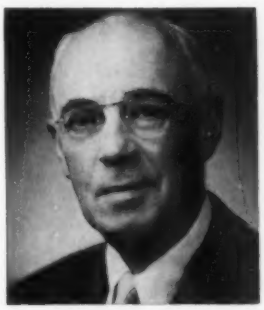
Strathmore promotes technical personnel

WEST SPRINGFIELD, MASS.—James C. Gallatin Jr. has been appointed technical director, Strathmore Paper Co., succeeding Percival P. Gooding, who has retired after 30 years with the company. Franklin G. Burr steps up as assistant technical director and Maurice E. Blew becomes quality control manager.

In his new post, Mr. Gallatin is in charge of research and development, also heads up the company's research fellowship at the Mellon Institute of Industrial Research in Pittsburgh, Pa. He attended the U. of Pittsburgh while on the staff of the Mellon Institute and received his b.s. in chemistry. He left Mellon in 1949, where he had been assigned to the Strathmore fellowship and joined the company at its Woronoco mills as a chemist.

Mr. Gooding has seen Strathmore's technical laboratory grow from four men to its present staff of 27. He is a chemical engineering graduate from MIT. ■

GALLATIN



GOODING

BURR

BLEW

Elbert H. Neese, Beloit chairman, dies

BELOIT, WIS.—Elbert H. Neese, chairman of the board, Beloit Iron Works, died here on September 17 in a hospital where he had been treated for a stomach ulcer.

His survivors include his widow and their two sons in Beloit Iron Works: Alonzo Aldrich Neese, vice president and treasurer of the company, and Elbert Haven Neese, Jr., president of Beloit Eastern Corp.

Mr. Neese was born Aug. 14, 1886 in Monroe County, West Virginia.

He was with Pusey & Jones from 1903-1916, the last four years as vice president—sales manager.

He was vice president of Beloit Iron Works from 1916 to 1931, president from 1931-1952, chairman from 1952 to his death. He was also chairman of the board and director of Sandusky Foundry & Machine Co.

He received an L.L.D. degree from Beloit ollege in 1952.

See the Last Word for a special tribute to Mr. Neese. ■

People continued on page 84.

- 3,000 HP
- Two integrally mounted, self ventilating motors
- Exceptional accessibility for plate change and inspection
- Simple to operate — electrical hydraulic controls can be automated or remoted
- Water cooled base
- Positive pressure feed by twin screw feeder
- Provides savings in space and labor — one No. 480 can replace several lower HP units
- Commercially proved

The field proven No. 480 is the largest, most advanced refiner ever built. From its clean cut, functional exterior through to its pressure fed, precisely balanced, counter rotating 48" discs (weighing close to a ton each), this refiner reflects many outstanding engineering innovations.

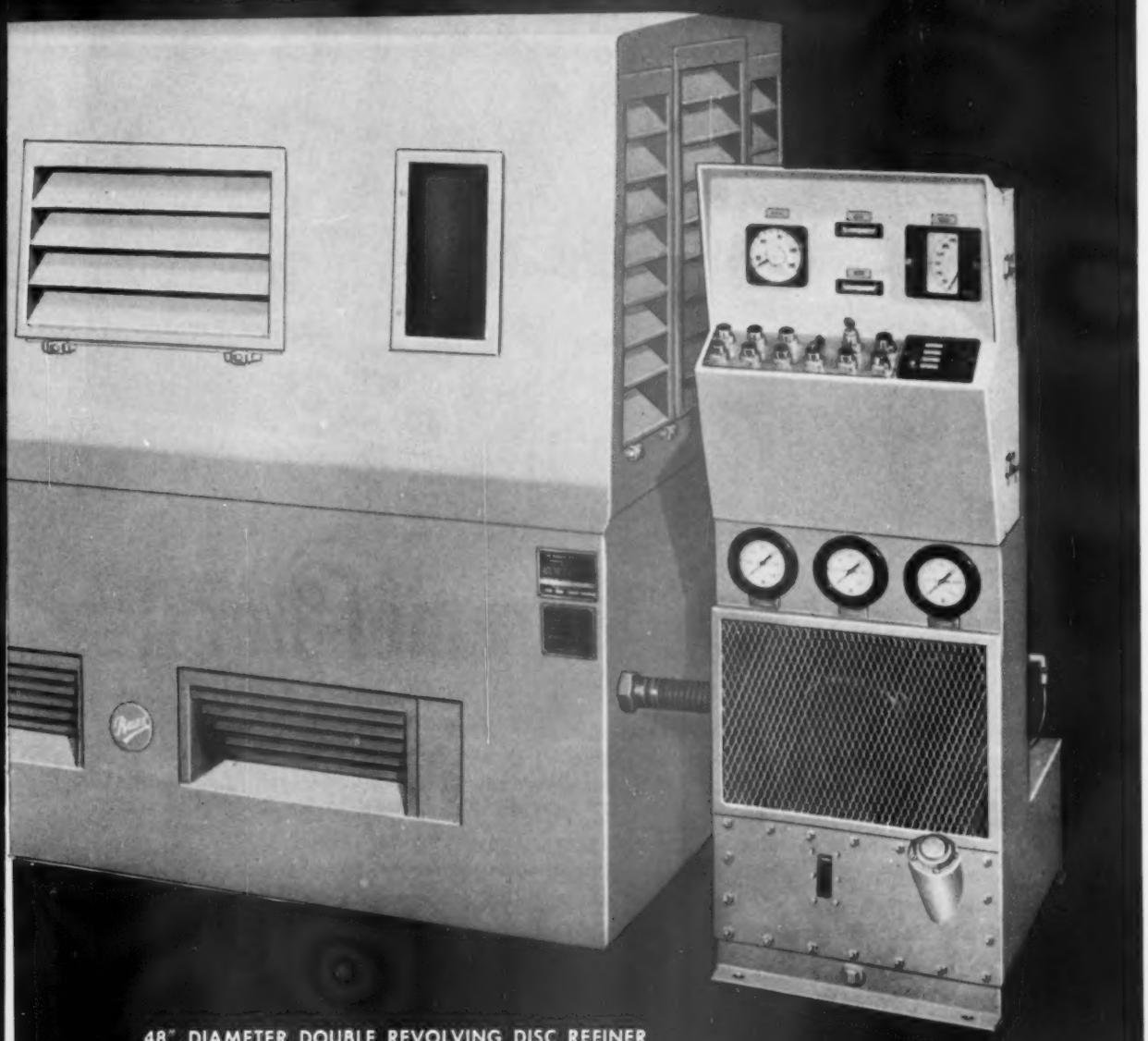
Operators tell you it is much easier to check or change plates on the 480 than on smaller machines of conventional design. Mill men appreciate its basic simplicity of design and control, because this spells reduced downtime and lower maintenance costs. Management notes the 480 saves space, upgrades quality and uniformity, can free personnel for other duties.

OTHER SIZES — The 3,000 HP No. 480 was developed for efficient production of groundwood from chips, high yield cold soda and high yield neutral sulphite stock. However, Bauer is also introducing a complete new series of refiners of the proven 480 I.M.* type, in sizes and power ratings to meet all production requirements. Get literature on this new series of double revolving disc refiners from your Bauer man, or write us direct.

THE BAUER BROS. CO./SPRINGFIELD, OHIO

"DISC REFINER HEADQUARTERS"

WORLD'S LARGEST PULP REFINER



48" DIAMETER DOUBLE REVOLVING DISC REFINER

DESIGNED SPECIFICALLY FOR STOCKS REQUIRING HIGH ENERGY INPUT

A good line to remember

Mark this down with your lines of truth: "Coated stock with a uniform finish makes sales go up." CLINTON starches and dextrins make sure your coating is consistently smooth and free from "skips." When gloss printing quality and strength count most, use CLINEO starches. And, to improve all-around printability and control curl, specify CLINCAL starches (they contain their own lubricants). With these starches, you can select from many varieties. Customers and prospects who judge paper on its face value can see and feel the difference when you use CLINTON coating starches.

Technical service always available

CLINTON CORN PROCESSING COMPANY

CLINTON, IOWA

MEETINGS

. . . October

Water Pollution Control Federation 34th Annual Technical Meetings and Manufacturers' Exhibits (with Industrial Wastes Forum and Sessions), Milwaukee Auditorium and Schroeder Hotel, Milwaukee, Wis.—Oct. 8-12

TAPPI, plastics paper conference, French Lick Sheraton, French Lick Springs, Ind.—Oct. 9-11

Metropolitan District, Empire State Section TAPPI, paperboard coating, Stouffers Restaurant, New York City—Oct. 10

Fibre Box Assn., annual meeting, New York City—Oct. 10-11

Southeastern & Southern Divs., PIMA annual fall joint meeting, Jung Hotel, New Orleans, La.—Oct 11-13

Pennsylvania - New Jersey - Delaware PIMA, fall meeting, Claridge Hotel, Atlantic City, N. J.—Oct. 12-14

TAPPI Annual Engineering Conference, Shoreham Hotel, Washington, D. C.—Oct. 15-19

National Safety Congress, annual meeting, Hotel Hilton, Chicago, Ill.—Oct. 16-20

Packaging Institute, 23rd Annual National Packaging Forum, Biltmore Hotel, New York—Oct. 18-22

PIMA, Miami Valley Div., annual meeting, French Lick Sheraton, French Lick, Ind.—Oct. 19-21

National Paper Trade Assn. fall convention, Conrad Hilton Hotel, Chicago—Oct. 22-25

. . . November

TAPPI, Annual Alkaline Pulping Conference, Rice Hotel, Houston, Texas—Nov. 1-3

Pacific TAPPI, papermaking-screening session, Longview, Wash.—Nov. 14

Manufacturing Chemists' Assn. 11th semi-annual meeting, New York City—Nov. 21

Pacific Coast PIMA annual fall meeting, Olympic Hotel, Seattle, Wash.—Nov. 30-Dec. 2

. . . December

Virginia-Carolina TAPPI, Jefferson Hotel, Richmond—Dec. 1

Western Forestry & Conservation Assn., 52nd Conference, Benson Hotel, Portland, Ore.—Dec. 6-8

Gulf Coast TAPPI, Battle House, Mobile, Ala.—Dec. 6-8

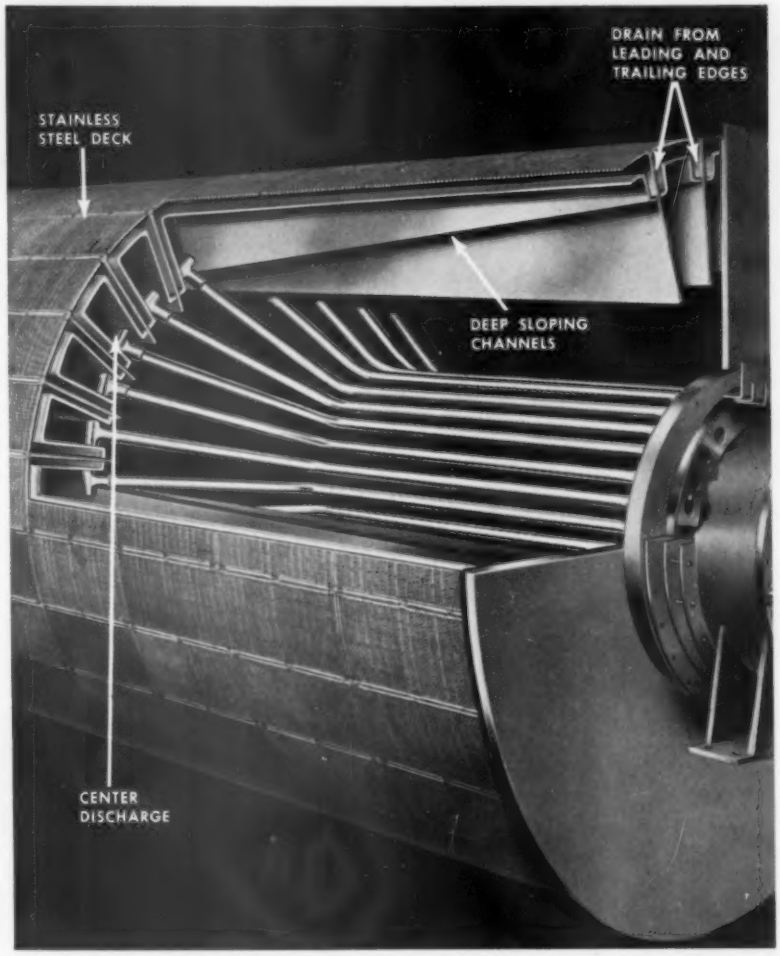
. . . January

Connecticut Valley PIMA, Publick House, Sturbridge, Mass.—Jan. 11

Gulf Coast TAPPI, Stafford Hotel, Tuscaloosa, Ala.—Jan. 12-13

Canadian Pulp and Paper Assn., technical section, annual meeting, Queen Elizabeth Hotel, Montreal—Jan. 23-26

HERE'S WHY SWENSON PULP WASHERS OPERATE WITH LESS DILUTION



Extensive operating records of Swenson Pulp Washers show consistently lower dilution required to produce exceptionally clean pulp. The reason is the superior hydraulic system inside the drum, assuring maximum effective use of drum surface through the Swenson arrangement of deep, sloping drain channels and center discharge piping.

Less dilution, in turn, means lower evaporator costs. Money-saving advantages like these, coupled with traditionally long, trouble-free service life, are characteristic of Swenson equipment.

Your Swenson engineer has extensive experience in pulp washing operations. Why not contact him today.

FREE: Technical article, *Measuring Brown Stock Washer Effectiveness.* Presents simplified method, backed by operating data from a variety of operations. Write for your copy to: Swenson Evaporator Company, 15632 Lathrop Ave., Harvey, Illinois. In Canada: Whiting Corporation (Canada) Ltd., 350 Alexander Street, Welland, Ont., Can.

PROVED ENGINEERING FOR THE PROCESS INDUSTRIES SINCE 1889

SWENSON

A Division of WHITING Corporation

WHITING — MANUFACTURERS OF CRANES; TRAMBEAM® HANDLING SYSTEMS; PRESSUREGRIP®; TRACKMOBILES®, FOUNDRY, AND RAILROAD EQUIPMENT.

CROSSETT PAPER MILLS ADDS EASY OPENING SALES APPEAL TO ITS ROLLS OF LEATHERNECK KRAFT WRAPPING

"Scotch" Brand tear strip tape delivers quality right to your customer's hands

Now it's a cinch for customers to remove heavy roll overwraps without damaging the paper on the roll . . . just as easy as opening a pack of cigarettes. The secret: A built-in "zipper" of "SCOTCH" BRAND Tear Strip Tape.

The tape is applied automatically to the underside of the overwrap stock before wrapping. Short "grab tabs" of strong tear strip tape are left exposed in the center of the roll.

To open, your customer gives each strip a simple, easy pull. No cutting. No gouging. No wrinkling. Only the wrapper tears.

For more information on this easy-to-apply, easy-to-use tape from 3M and for information about 3M-Matic applicators, contact your nearest "SCOTCH" BRAND Tape Distributor, or write: 3M Company, 900 Bush Avenue, St. Paul 6, Minnesota, Dept. BT-101.

SCOTCH BRAND
tear strip tape

MINNESOTA MINING AND MANUFACTURING COMPANY
...WHERE RESEARCH IS THE KEY TO TOMORROW

3M COMPANY

"SCOTCH" IS A REGISTERED TRADEMARK OF 3M CO., ST. PAUL 6, MINN.

FINISHED PRODUCT PROCESSING EQUIPMENT Winders • Reclaim Winders • Cutters • Slitters • Sheeters • Supercalenders • Roll Wrappers • Roll Lowering Tables • Roll and Shaft Handling Equipment • Conveyors • Unwind Stands and Tru-Tension Controls • and other equipment for the paper and allied industries.

before you decide on new **converting equipment**

meet some "Beloit Eastern" people

PHOTOS: S. R. CHRISTENSEN

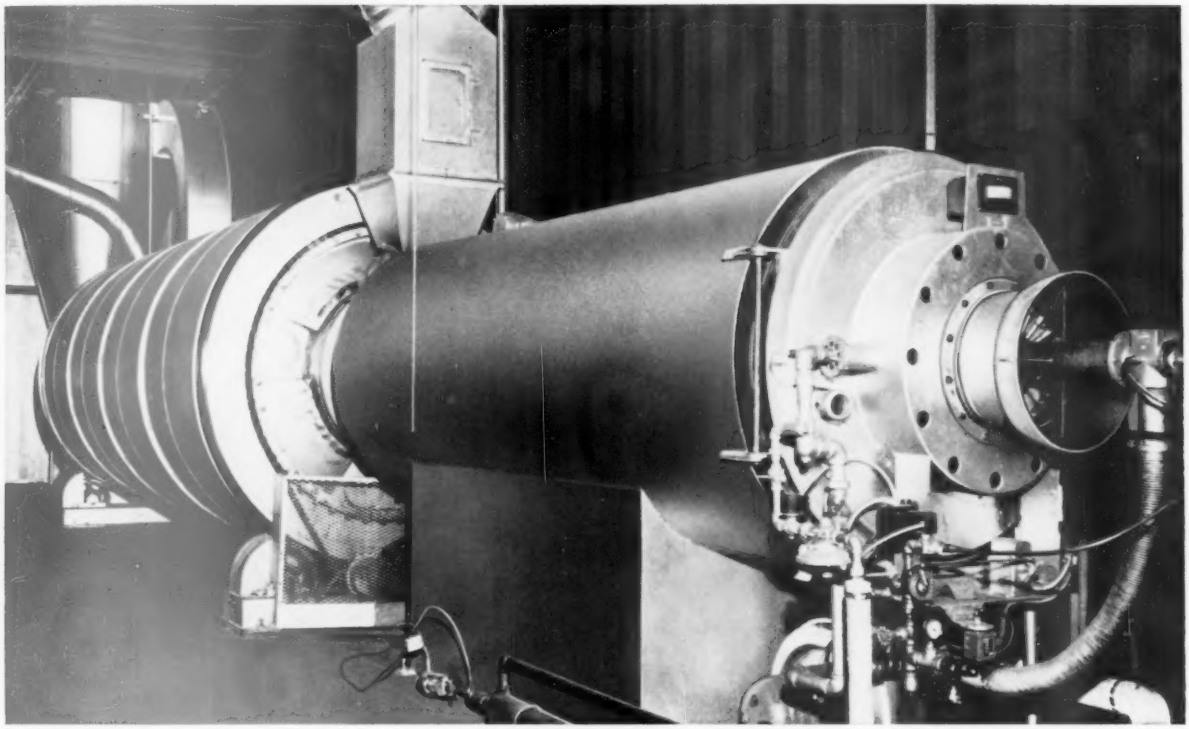
IBM DEPARTMENT SHOWS PROGRESS OF WORK at a glance. Production manager H. C. Watson *(far left)* checks progress report with Owen W. Story, manager of customer service, in the IBM area. Ability to get a progress report on any order in the shop in a matter of minutes is part of cost reduction program. Automation helps get materials in on time, customers' orders out on schedule.

INVENTORY CONTROL SYSTEM speeds production and anticipates requirements of materials-handling engineers. In addition to controlling inventories and machine loads in the Beloit Eastern shops, automation expedites payrolls and other accounting functions.

BELOIT EASTERN PAPER MACHINERY DOWNINGTOWN, PENN.

Member Beloit Group

BELOIT EASTERN
CORPORATION
Downingtown, Pennsylvania



Space-Saving HEIL DRYER

saves money, produces highest quality dried pulp

Since 1930, Heil dryers have set the pace in the dryer field. Pulp producers especially find they have numerous money-making advantages, such as:

FAST, HIGH-QUALITY DRYING OF PULP—Short retention of particles in the exclusive 3-pass drum means short exposure to the drying medium — no harmful effect to pulp. Strength values are quickly restored by a slight beating or refining. Brightness loss is negligible.

UP TO 95 PERCENT OF MOISTURE REMOVED — Rapid drying in the compact 3-pass drum helps prevent spoilage of pulp in transit or storage. Fine, light particles stay in the drum for a matter of seconds, while heavier particles remain until desired moisture is removed

LOW FUEL COST . . . LOW ORIGINAL PRICE — The Heil dryer uses less fuel per dry ton than any other machine, due to design features that conserve heat. And it's lower in price than other dryers of equal evaporating capacity.

LOW OPERATING COST — Only one operator per shift is needed for a nominal 100-ton-per-day Heil dryer system, thus keeping labor costs at a minimum.

REQUIRES LESS FLOOR SPACE AND HEAD ROOM per ton of evaporation capacity than any other machine. Saves installation costs. And if a special dryer house has to be built — you can build a smaller one for a Heil — save here, too!

Write for literature on the quality-drying, efficient and economical Heil dryer.
Names of users on request.

HEIL Quality PRODUCTS

THE HEIL CO.

MANUFACTURERS OF THE ARNOLD DRYER

3000 WEST MONTANA STREET • MILWAUKEE 1, WISCONSIN

Looking for "Bugs"

in Huyck's Customer Service Department

These men are not entomologists. They are Huyck Customer Service Engineers studying a used felt. Looking for ways to make better felts is their job. They may check portions of this felt in our laboratory for chemical damage, type of plugging material or excessive wear, thus pinpointing causes for removal.

Such unique and complete services complement Huyck's advanced design engineering — further assurance that Huyck performance means High Performance on your machines.

HUYCK FELTS

Huyck Felt Co., Rensselaer, N. Y.; Aliceville, Ala.

Division of Huyck Corporation

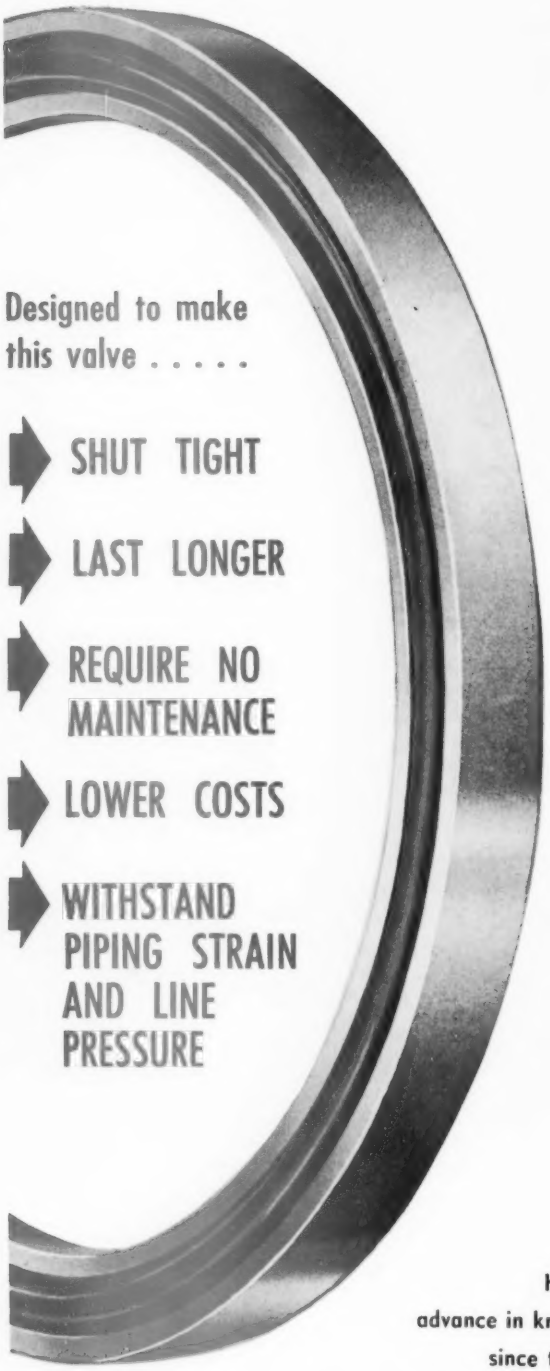
In Canada: Kenwood Mills Limited, Arnprior, Ontario

FIRST IN FELTS SINCE 1870

NOW

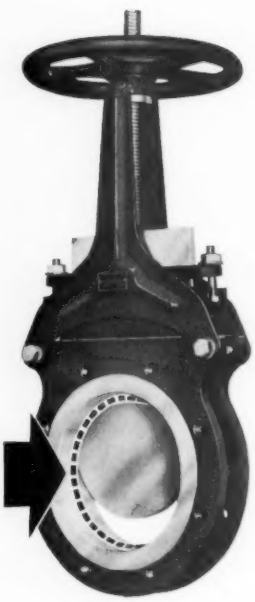
From DeZURIK.... the

RING·SEAL SEAT!!



Designed to make this valve .....

- SHUT TIGHT
- LAST LONGER
- REQUIRE NO MAINTENANCE
- LOWER COSTS
- WITHSTAND PIPING STRAIN AND LINE PRESSURE



POSITIVELY NEW

There is no other knife-gate valve exactly like this one! The DeZurik Ring-Seal is the first design of its kind, definitely a major advancement in gate-valve seating, attaining wholly new standards in tightness, simplicity, reliability, durability.

NEW BONDED RING

The resilient "heart" of the DeZurik Ring-Seal is fitted into an annular groove and bonded permanently to the metal ring. There's no pull-off or stripping, no chance for the rubber to be forced or pulled out of position, no shearing or shredding of the resilient ring.

NEW SIMPLICITY

The stainless gate doesn't touch the metal area of the seat. There's no bubbling or leaking'. The DeZurik Ring-Seal can be replaced in minutes; can't be installed wrong. The entire design means far less wear, far less care.

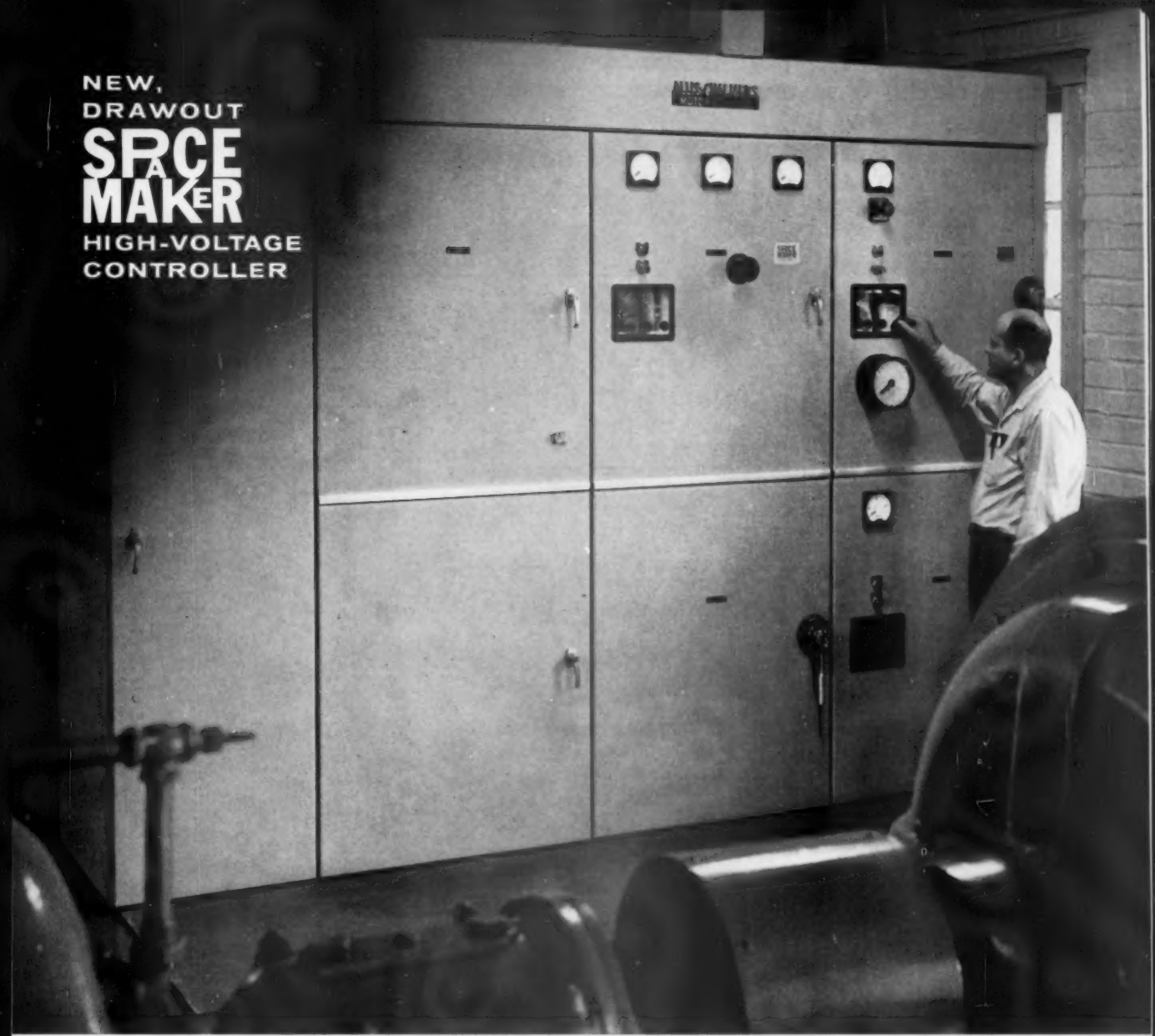
NEW ECONOMY

Tests prove that the DeZurik Ring-Seal Valve offers longer life, greater leak-free performance, the least maintenance, yet its initial cost is definitely low!

Here is the first major advance in knife gate valve design since they were introduced. Now . . . at last . . . there's a low-cost valve for corrosive services that shuts tight . . . and DeZurik makes it! Write for Bulletin 302.

LOOK TO THE **DeZurik Corporation**
SARTELL, MINNESOTA

NEW,
DRAWOUT
SPACE
MAKER
HIGH-VOLTAGE
CONTROLLER



SPACEMAKER control at Stratman pumping station: (from left to right) 1. Auxiliary controls. 2. Fused disconnect switch (upper) and spare cubicle (lower). 3. Synchronous control. 4. Wound-rotor control (upper) and squirrel-cage control (lower).

New SpaceMaker control eliminates costly floor-rebuilding for St. Louis County Water Company

Privately owned St. Louis County Water Company serves more than 160,000 customers in a 225-square-mile area adjoining St. Louis, Mo. This progressive utility recently replaced an obsolete panelboard in a "cramped" pumping station with new *SpaceMaker* high-voltage motor control.

Allis-Chalmers new, exclusive two-high design enabled the utility to install all needed controllers in a single lineup. This permitted use of existing conduit without changes — thus saving cost of conduit relocation and floor reconstruction. Other controllers would have required a back-to-back layout.

Equally important: the single lineup of *completely* drawout front access controllers saved valuable aisle space.

To learn more about the *exclusive* cost-cutting, space-saving features of *SpaceMaker* control, contact your A-C representative or write **Allis-Chalmers,** Industrial Equipment Division, Milwaukee 1, Wis.

SpaceMaker is an Allis-Chalmers trademark.

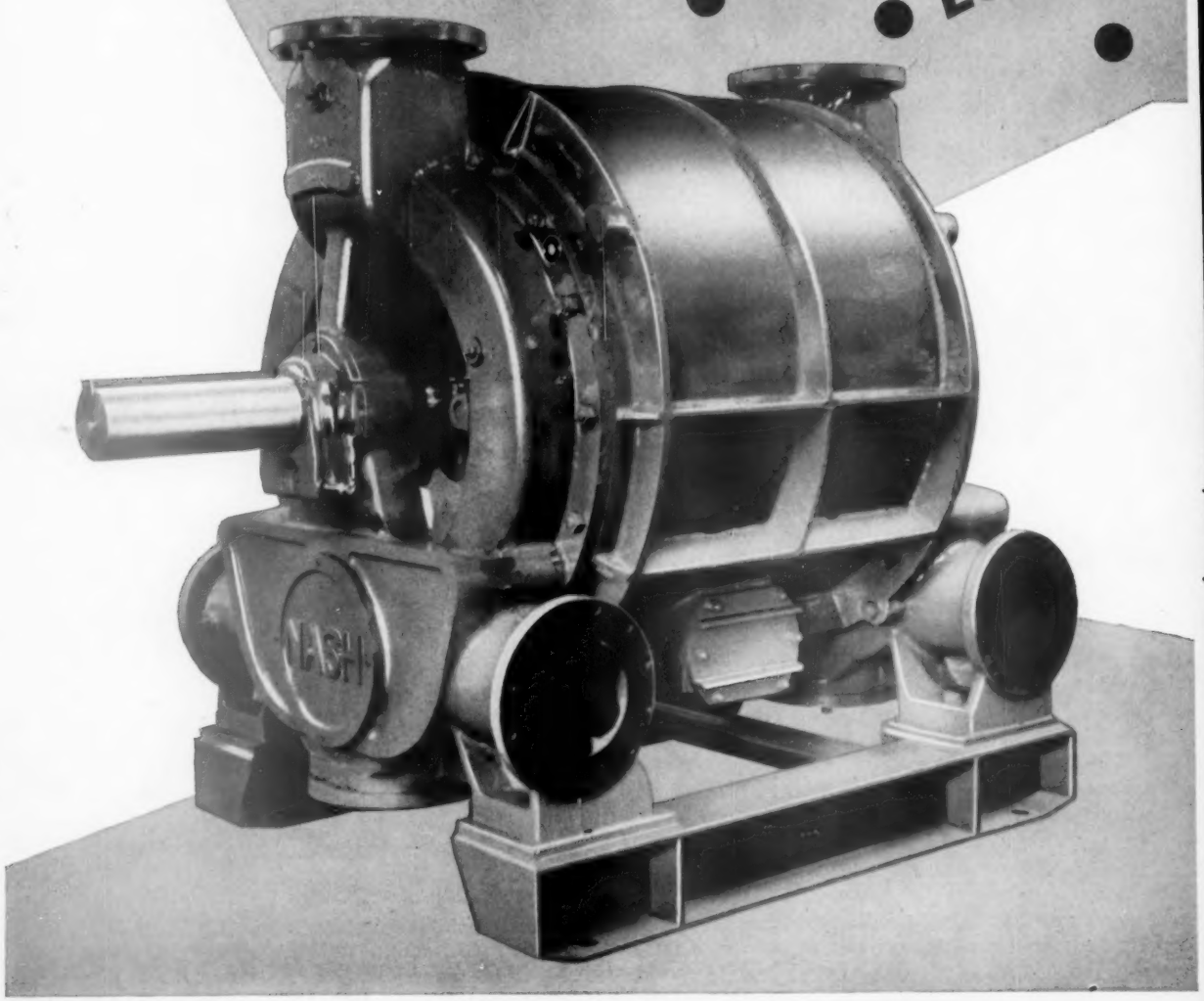
Single cage controller in compact enclosure measuring 45 inches high, 36 inches wide and 32 inches deep.

ALLIS-CHALMERS A-1532

a new NASH

designed for

- HIGH PERFORMANCE
- RELIABILITY
- LOWER



VACUUM PUMP

INVESTMENT
REDUCED OPERATING COSTS

- Vacuums to 25″ of Mercury with sustained volume and lower horse power. Available in capacities to 9000 cubic feet.

Can be supplied with integral reduction gear for direct connection to high speed motors.

Material reduction in floor space required.

Send now for details of the new 6000 series Nash Vacuum Pumps.

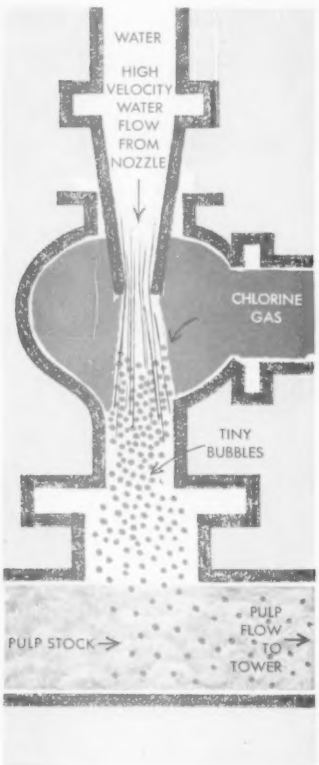
NASH ENGINEERING COMPANY

SOUTH NORWALK, CONNECTICUT, U.S.A.

PENNSALT'S 3 AIDS
to High-Quality Pulp Bleaching

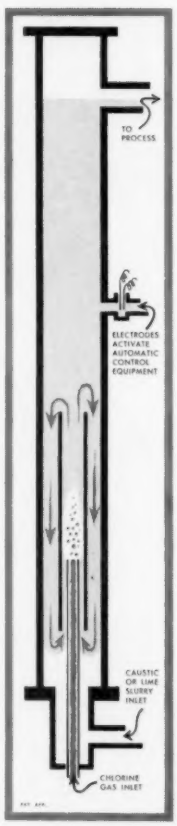
1 PENNSALT DISPERSED CHLORINE SYSTEM

This world-wide accepted engineering development is simple to install, extremely effective and low in cost. Chlorine gas is dispersed into countless, minute bubbles. When distributed throughout the pulp mass, rapid and uniform chlorination takes place.



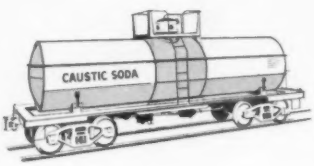
2 CONTINUOUS HYPOCHLORITE PREPARATION

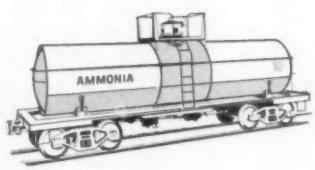
The Pennsalt system is for sodium or calcium hypochlorite production in new plants or it can be superimposed on present batch plants. Produces uniform bleach in less space, at less cost than batch method.

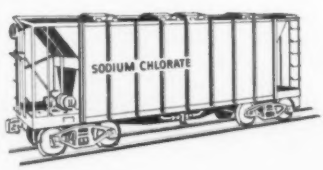


3 PENNSALT CHEMICALS AND TECHNICAL SERVICE

Pulping and bleaching chemicals are manufactured under Pennsalt's stringent standards of quality. Large, modern plants are strategically located to give you prompt, close-at-hand service. Pennsalt offers the technical assistance of personnel with years of experience in solving pulping and bleaching problems.







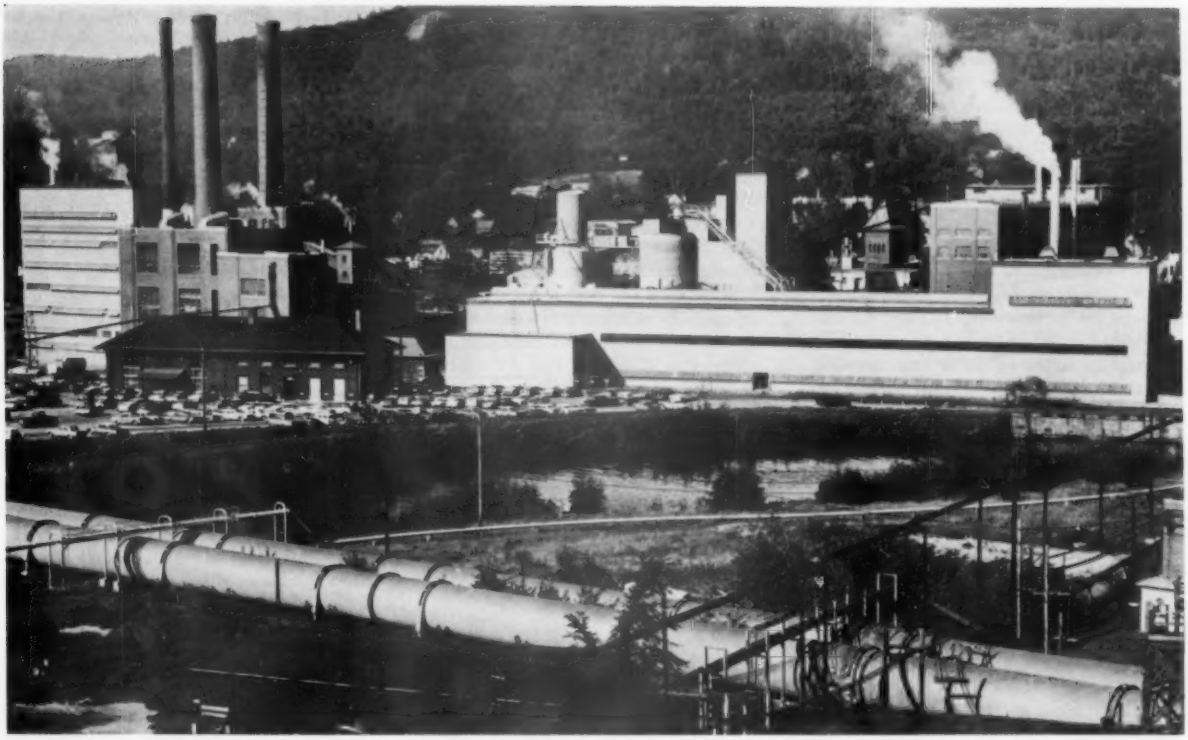
For information, write or call the Pennsalt office nearest you.

Pennsalt Chemicals
ESTABLISHED 1850

INDUSTRIAL CHEMICALS DIVISION
PENNSALT CHEMICALS CORPORATION

2901 TAYLOR WAY, TACOMA, WASH. — 3 PENN CENTER, PHILADELPHIA, PA.

SALES OFFICES: APPLETON • ATLANTA • CHICAGO • DETROIT • LOS ANGELES • NEW YORK • PITTSBURGH • PORTLAND • ST. LOUIS • SALT LAKE CITY • SAN FRANCISCO



GENERAL VIEW OF OXFORD PAPER CO.'s West Side Mill at Rumford, Me., where a new softwood kraft system has been "shoe-horned" into installations for hardwood kraft pulp and various paper machines. Long building is concrete and Galbestos steel-siding enclosure for 275-ft. lime kiln. Enclosure makes it more efficient, engineers say. Also Oxford operators use spiral of stainless steel instead of chain inside kiln for improved operation.

"Best Ever" Outlook for Softwoods Changes Paper-Making at Oxford

By ALBERT W. WILSON, Editor and VINCENT DE SALVO, Managing Editor

—Rumford, Me.

THE "SHIFT TO HARDWOODS" has so dominated the thinking and planning of so many management, production and technical people in this industry for so many years (not only in America but abroad) that you will be excused if you raise an eyebrow over "a new shift to softwoods."

But it is true! It is happening at Oxford Paper Co. in this Maine community, the geographical center of the greatest hardwood forest in America, stretching from New Brunswick to Pennsylvania. Of course, Oxford will keep on using hardwoods too.

But the big news here is the new lease on life for softwoods. That is, softwoods not previously used in the Oxford mills. The new resources: 1, Northern pine; 2, greater quantities of Eastern hemlock than before; and 3, sawmill softwood chips.

Spruce is almost gone as a pulpwood. Small quantities come from Oxford holdings in New Brunswick. But fir is still 65% of Oxford's softwood supply.

A new softwood kraft mill that cost about $17,000,000 has changed the picture here at Rumford. Back in 1949, Oxford started its hardwood kraft mill, changing over from soda, and the hardwood bleach plant was built in 1953. Two species of maple, plus birch and beech are used.

These Oxonians (Rumford Alma Mater) are convinced they were among the first if not *the* first papermakers to use hardwood chips in America—back in 1922. By the late 1930's, they were on 90% hardwoods

Oxford's own staff were trained for new positions

in the soda pulp mill when many mills now deep in hardwoods had not even thought of this then new raw material for pulp. There wasn't enough eastern poplar to keep the soda mill going. It was going the way of spruce. [In some nations and areas, poplar is lumped with hardwoods (deciduous), even though it is soft (like coniferous trees). But not here. There's not much left, anyway.]

The new "Oxford Movement" up this way is to softwoods. Oxford had to go farther and farther for the softwoods used in sulfite pulping. The change to softwood kraft was decided upon in 1958. Just recently the new plant started up.

It was "engineering gymnastics" to twist the new system in and around the existing hardwoods kraft mill, and Oxford's 11 paper machines and its big North Star Coater, another major development here in late 1959. New buildings were "shoe-horned" among the old buildings, some new machinery was "shoe-horned" in the historic old buildings, which are hemmed in by the tortuous, fast falling Androscoggin River that creates virtually an island on which the mill is situated amid steep surrounding hills.

There's a new softwood kraft bleach plant, too, and it has just started up with four stages, one of chlorine dioxide, as in the hardwood bleach plant. But if it is desired, the third hypochlorite stage can be shifted to chlorine dioxide, and a caustic can be added in between the (ClO_2) stages.

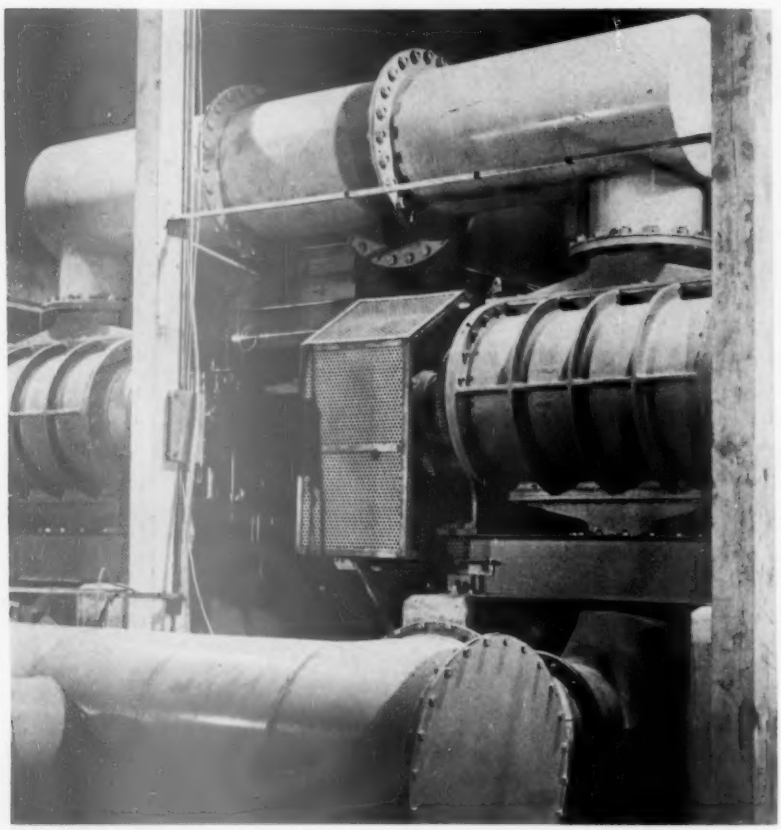
The result of all this: Whereas in the 1930's and 40's, Oxford steamed along with two sulfite mills, one soda pulp mill and a groundwood plant tossed in for good measure at Rumford, it now has two kraft mills. It was rather unique among paper companies in that it was able to run its Island sulfite mill while building the new softwood kraft mill.

"The outlook for softwoods is better than it ever was in the old spruce-fir logging days," says Mill Manager Charles L. Ferguson and Assistant Mill Manager-pulp Howard P. Waldenmeyer.

This year for the first time Oxford began buying sawmill chips—mostly softwood pine—from scores of New England's little sawmills and woodplants. These chips provide 18% of the softwood supply.

Where there were alarms sounded some years ago in official and conservationist circles concerning the softwood stands, now they have quieted since the stands are growing about 9 per cent faster than they are being cut. In the old days, it was estimated that the cut exceeded growth by 160%—but in light of today's inventorying, the accuracy of those surveys is now doubted.

At any rate, Oxford has sunk a big investment in a softwood kraft mill and it figures that there will be ample



CHIP BLOWERS ARE IMPORTANT new system of transportation at Oxford. Purchased sawmill chips started with softwood kraft mill, now account for 18% of new kraft mill's supply. For new softwood mill, chips are stored in two silos, one for hemlock and pine, the other for spruce and fir.

OXFORD NOW BLOWS ITS CHIPS. Here one narrow pipe line can be seen as it "wraps" partly around lime kiln building and continues to Island

...Chlorine dioxide used in two bleach plants

wood resources to feed it for a good many decades to come. Last year Oxford bought 91% of all of its wood, while it also has extensive timberlands of its own. This approximate ratio will continue.

The two 4-stage bleach plants for the two kraft systems at Oxford are both Improved Machinery processes. The softwoods system, using some remodeled and rebuilt facilities from the old sulfite system, is successively, chlorination, caustic, hypochlorite (or this can be chlorine dioxide) and the final stage is chlorine dioxide. A caustic stage between the two ClO_2 stages is possible. To permit the shift to two ClO_2 stages, the tower now used for hypochlorite is set in a modified polyester cement.

The hardwood kraft bleach system consists of chlorine, caustic, hypochlorite and chlorine dioxide stages.

Chlorine dioxide is manufactured by the Solvay process.

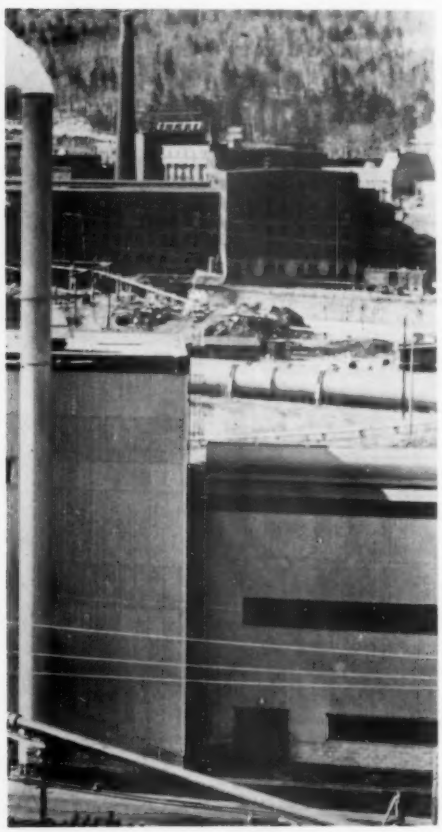
The pollution problem is now virtually solved for Oxford with its two kraft mills. Most of the pollution load on the Androscoggin was sulfite. River Master Walter Lawrence, civil court appointee, reported, even before the softwood kraft mill was operating, that 85% of the pollution load on the Androscoggin already had been eliminated in 20 years as a result of a $22,000,000 joint investment by International Paper, Brown Co. and Oxford (PULP & PAPER, page 19, Sept. 18, 1961).

Back in 1941, mills on the Androscoggin were producing 5,800 tons of sulfite pulp per week. Many control measures were tried and some succeeded. Brown went to magnesia-base sulfite and kraft pulping. The last of the sulfite mills to be shut down were two belonging to Oxford. One was closed over two years ago, followed by the Island division this year—the two representing combined capacity of 285 tons per day.

Meanwhile, the hardwood kraft mill has been expanded from 260 to 350 tons per day. The softwood kraft mill's capacity is 175 tons per day. There is no change in the groundwood mill, which remained at 60 tons per day.

The training program for the new softwood kraft mill was a notable achievement at Oxford. The entire staff for the new mill came from within the Oxford organization. Vice president Phil Hovey and mill manager Ferguson are especially proud of this record.

A Kamyr continuous digester, 90 feet high, with a nominal capacity for 210 tons, posed a critical problem for the mill. This is one Kamyr which ran smoothly right from the start, but it must be said Oxford men toured the continent and learned the lessons of the pioneering Kamyrs elsewhere, which ran into some problems. Mr. Ferguson said "we started training for



mill. In this Rader half-mile line, chips are blown through at rate of a mile a minute. Therefore, a half minute from one end to the other.

NEW RECOVERY UNIT, housed in Galbestos steel siding, is a 300 ton Combustion Engineering unit. Behind it is the existing 200-ton CE recovery unit for hardwood kraft. A Koppers electrostatic wet bottom precipitator and a J. O. Ross Engineering economizer, are important adjuncts.

Two kraft mills replace sulfite at Rumford, Maine...

the Kamyr operation three months before startup."

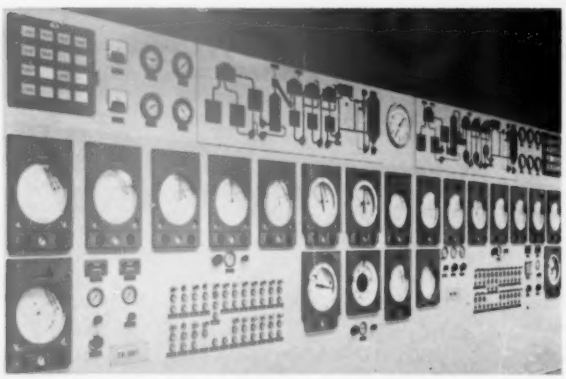
Extensive instrumentation, combining of softwood and hardwood systems on central control panels.

Engineering and research facilities at Rumford are among the most extensive and stimulating for good work that will be found in any mill. Thirty engineers under chief engineer E. V. "Vic" Ahara and manager of engineering Jack A. Rogers, working on long and short term mill planning and capital work programs, were in the thick of the big job. The research department, with even a larger staff, under George S. McKnight, and his assistant, Bernie Mayer, came up with the answers to insure pulp quality, and cleanliness.

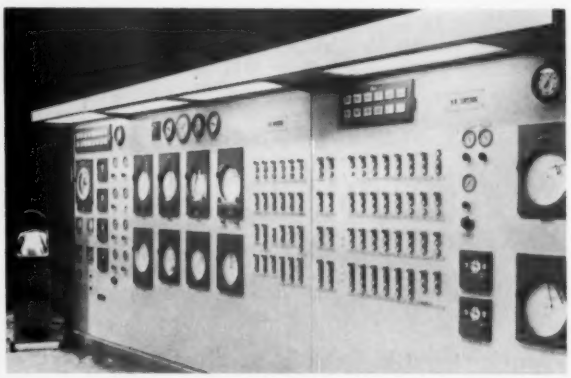
Mr. Waldenmyer and his assistant, Maurice Anderson, in pulping, Harry Conner, assistant mill manager-paper, and Vince Carpano, his assistant, are other key men.

Engineers from Kamyr Inc., instrument engineers from the Honeywell company, and process engineers from Improved Machinery spent long periods at Rumford working out the new developments and helping to solve problems.

Naturally, closely supervising the overall program were President William H. Chisholm, Mr. Hovey and his assistant, Paul Petzhold, former Rumford manager, who is based in New York.

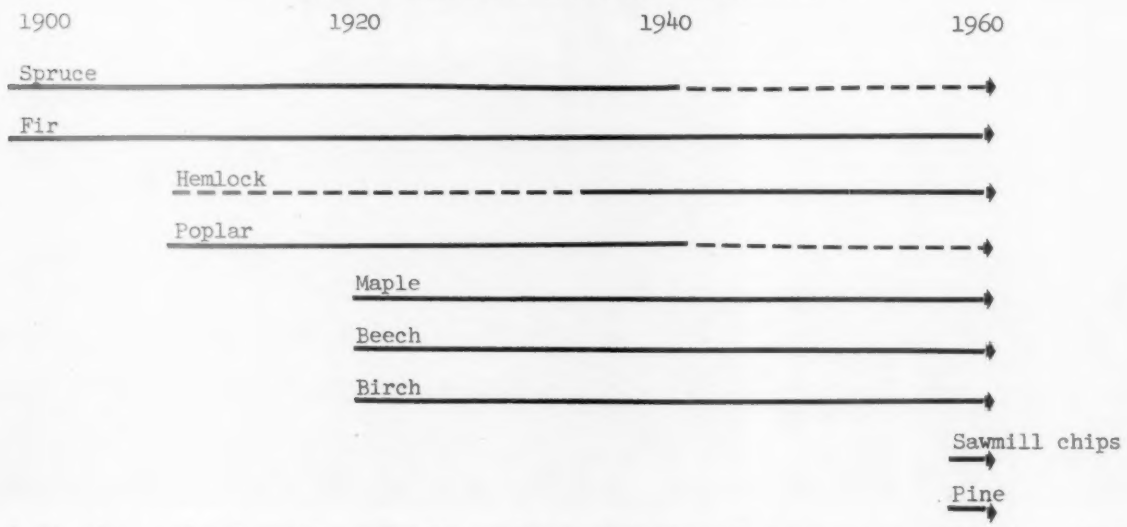


PANEL BOARDS SIDE BY SIDE for softwood kraft brown stock washing (at left) and for hardwood kraft (at right) need one man for operation. There are new Improved Machinery washing systems for both processes.



SCREEN ROOM PANEL BOARD—left for softwood, right for hardwood. In left hand corner is a television used for closed circuit observation of one remote rewasher. The TV unit here enables one man to operate the two systems.

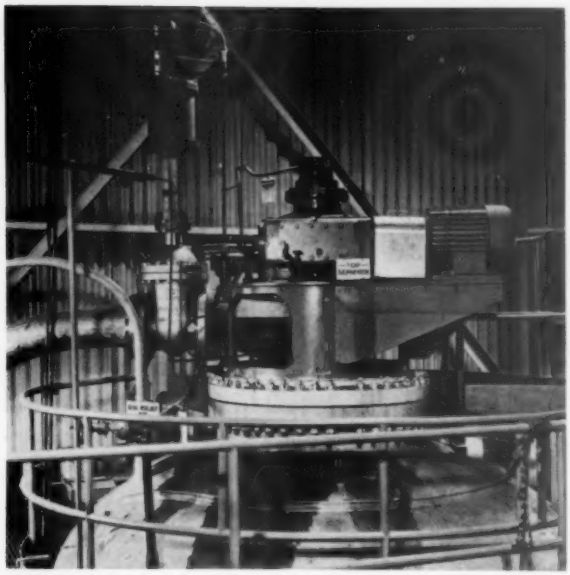
The History of a Paper Company as Told in Tree Species Used Oxford's Changing Raw Material Resources



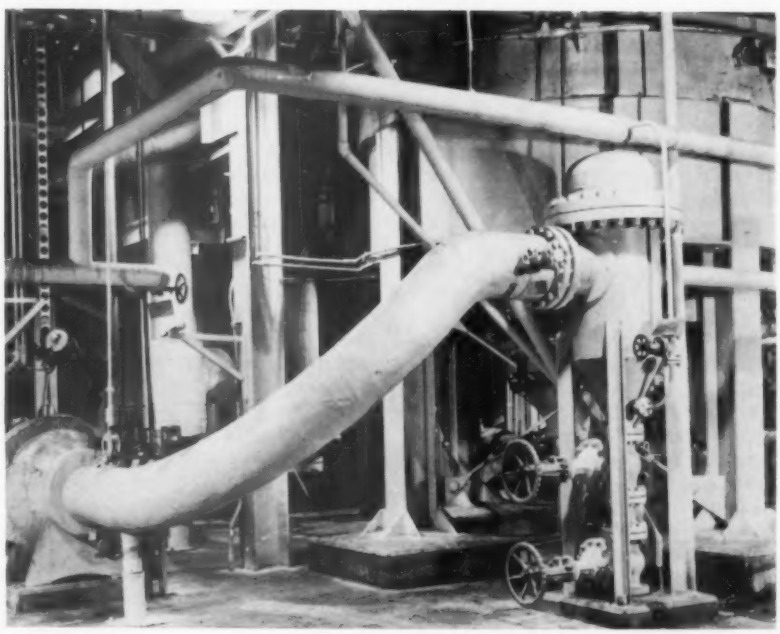
Explanation: Spruce and poplar supplies are diminishing as shown by broken lines. All other species are continuing in use, hemlock after a weak start. The chart indicates approximately when use of different species began.

...New continuous digester is key unit

RARE VIEW of inside of Kamyr digester (right) shows central piping between upper and lower screens. Midway down digester, where liquor is withdrawn through a stainless belt under suction of a pump, liquor passes through an indirect heater and returns to digester through this central pipe. Single Kamyr digester cooks softwood kraft pulp. Shown (below) is digester top separator. Digester is 90 ft. high with capacity of 210 tpd, and is 12 ft. 2 inches in diameter.



CONTINUOUS DIGESTER OUTLET has metal trap and blow unit. There are two cooking zones with liquor withdrawn midway and returned. Digester bottom has slow moving rotary scraper which draws stock from periphery of digester to central bottom outlet. At 9% consistency, stock is blown through metal trap, a blow unit with a rotary scraper and through one of two blow lines as shown here to blow tank. Controls for Kamyr are on a Foxboro semi-graphic panel on operating floor.



COATING AT OXFORD

'North Star' brighter than ever

By A. W. W.

—Rumford, Maine

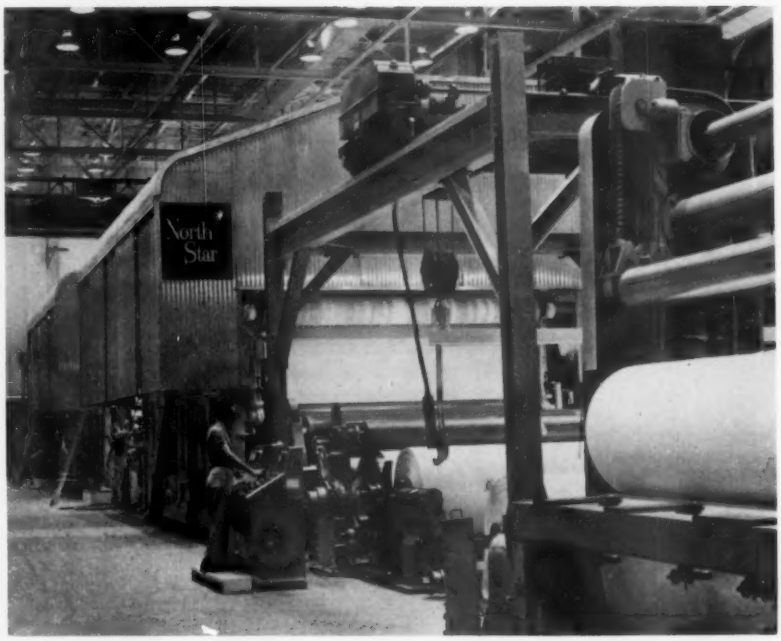
THE NORTH STAR COATER—the giant, high speed, heavy coating machine which straddles across 140 feet of floor space in a huge new building at Oxford Paper Co.'s mill here—is still a mysterious and magical name for technicians in this industry. And it probably will be for some time to come.

Oxford permitted a small group of graphic arts and paper industries editors to roam at will in the normally "out of bounds" North Star Coater machine room here some days ago. But pictures were taboo. Only one picture has been taken of this machine (right) and probably that will be it, for a while. This is because certain patents are pending.

An Oxford engineer commented, "It's many little things, many adjustments and small features which make this blade coater different. It would take even an expert quite a little time to figure them all out, and understand what is done."

This big blade, which reputedly puts on more coating at greater speed than any other coater in existence, operates in a bath of coating that hides to any observer what is really going on.

Some of the basic and obvious facts about this coating department—for that is what it is—were seen by Oxford's editor-guests. They are interesting facts—but give away no secrets to a technical man.



ONLY PHOTOGRAPH MADE of Oxford's famed North Star coater, which puts 10 to 12 lbs. of coating consecutively on two sides at remarkably high speed.

Editors were thrilled to see the Wood flying paster change a feed roll at tremendous speed. This flying paster is about 96 or 98% efficient. It was 100% efficient when viewed by Oxford's guests, and a spectacular performer.

There are two sections to this coater, because it successively coats top and bottom side.

A major reason for the existence of this new invention—which it is, of course—was the *National Geographic* magazine's decision to shift to a web-printing process. It had been buying its paper in sheets. What the *National Geographic* needed was a paper produced at high speed but with a heavy coating—10 to 12 lbs. on both sides. This is what the North Star does for the first time at very high speeds.

A whole story could be written about what *National Geographic's* program led to, but suffice to say the North Star was born and meanwhile a Lawrence, Mass., paper mill, which had been making *National Geographic* paper, became a property and a division of Oxford.

Now all this paper, except the cover, is made on the North Star. Anyone who compares the new *National Geographic* with the old magazine will quickly see the sensational paper-printing improvement. Besides *National Geographic* paper, quality merchant paper grades also are made on the North Star. Other publication papers are made on the two on-machine coating paper machines at Rumford, both roll coating with the Kimberly-Clark-Mead process.

Putting a 10 to 12 lb. coat on, say, an 80 lb. paper, the North Star may speed up to as much as 1800 or 1900 ft. per minute. At full capacity, it could probably produce 250 tons per day, its output is running closer to 200 tons.

It is 150 inches wide. After the first blade is a Gardner high velocity hooded 6-ft. air dryer, which operates at 16,000 ft. per minute. Then come five after-dryers. Even with the remarkable work done by the Gardner dryer, the additional drying is needed because of the heavy coating. These are not official figures, only estimates.

Next comes the second section. Of course, to coat the other side, the paper must be led under the floor and up and over to the blade. Next, there's another 6-ft. Gardner dryer. After this are six after-dryers—one more than in the first section.

Two rolls after these two sections of the coating machine there is an Accu-Ray beta gauge monitor for regulating basis weight, which is recorded on a board. Then, a Mt. Hope Machinery tension roll, and the reel.

A giant Rice Barton-Eck (Düsseldorf, Germany) supercalender, with 12 rolls, a little wider than 150 inches to take the North Star rolls, is at the end of the room. Its potential speed is rated at 2,000 fpm.

An interesting thing about the North Star room is that the air is double-filtered for cleanliness, with filters in series. One is a coarse filter, the other a fine filter. There is

some outside air, as the room is not air-tight and the room is usually about 75° F.

In an adjoining room is a new Beloit rewinder for North Star paper, of a speed of 3,500 fpm. It is potentially able to go up to 5,000 fpm. There are three Appleton Machine supercalenders in this room, smaller than the Rice Barton-Eck, but the four of them "super" about 90% of Oxford papers. There are Cameron Machine Co. rewinders following these Appleton supers.

One of the features of the North Star coater which is a Rice Barton development used in its other coaters is that all tension controls for coater drives are totally enclosed with a plexiglass cover.

Rice Barton Corp. worked with Oxford researchers and engineers in the development of the North Star, the first fully designed blade coater with hooded dryers. About the same time in Minnesota, Blandin Paper Co. was introducing its smaller blade coater built by Rice Barton. Later Blandin put in a second larger blade coater incorporating the Rice Barton North Star features to a large extent. Instrumentation is Honeywell.

The North Star Coater is so huge and fast that sometimes as many as three of the 11 Rumford machines are supplying it with paper. Machines B and C and No. 6 normally do so. Sometimes even a fourth machine is added.

The two on-machine coating paper machines, No. 11 and 12, may coat up to 260 tons per day. The North Star does not match the two of them, but it could come fairly close.

Oxford has a great history in paper coating—conversion coating back in 1941, on-machine coating in 1947, now the North Star.

Its on-machine coating paper machine No. 12, built by Rice Barton in 1948, has kept pace with improvements. It has a 146 in. wire, running at 1360 fpm. and was rebuilt for coating 43-lb. publication paper. Roll coaters are between regular dryers and after-dryers. It has a new Beloit pressurized inlet. Recently the couch was raised, giving a longer forming area, less draw, and this picked up its efficiency.

No. 11, rebuilt in 1947 for heavier coating, also a Rice Barton machine, has a 163-in. dryer also with roll coater between first dryers and after dryers. It runs about 1,100 fpm. Improvements are made continuously.

Machine C, also with a 163-in. wire, running 900 fpm., was rebuilt three years ago and has a size press between dryer sections that can be used for coating. This is the most complete and recently rebuilt of the machines here. Its Fourdrinier was improved, a new headbox provided, a new press section—straight through press followed by reverse press—and new reel were installed.

It is interesting to see in the old buildings at Oxford's mill how great care is taken to improve conditions. Everywhere you look improvements have been made.

Extensive continuous metering for mixing of hardwood and softwood pulps and groundwood is practiced. Magnetic metering has recently been adopted. Earlier equipment provided volumetric metering.

Both Black-Clawson Selectifiers and Bird Centriscreens are used ahead of machines, along with Vortrap cleaners.

In the finishing end, the newest of nine cutters is a Clark-Aiken with turnaround stand for cutting eight rolls at a time. Another unit, a Hamblet high speed 600 fpm. cutter has one of the first turntables, this one at floor level. A Southworth straddle transfer table is a recent addition.

For improving paper quality, work goes on almost continuously in the Oxford paper mills. ■

These men help chart Oxford's continuing growth

OXFORD'S RUMFORD TEAM: (standing, l. to r.) Vince Carpano, quality control mgr.; Howard P. Waldenmyer, asst. mill mgr., pulp, Ohio born, U. of Michigan alumni, and for 20 years in research at Oxford; Maurice S. Anderson, groundwood and bleaching supervisor, pulp; Bernie K. Mayer, asst. research director; (seated) E. V. "Vic" Ahara, chief engineer, a U. of Toronto alumnus, formerly with Abitibi and Canadian mills; Charles L. Ferguson, mill mgr., from Nova Scotia, but at Rumford many years; Jack A. Rogers, asst. chief engineer; George S. McKnight, director of research, also from Canada.

CORRUGATED CONTAINERS CONFERENCE

New Horizons for Corrugated

Conference theme is use of flexographic printing process

Corrugated containers have practically taken over citrus shipping

Chemicals and liquids are packaged in poly bags in corrugated

San Francisco CORRUGATED CONTAINERS are finding new fields of their own. One major trend is to combination of plastics and corrugated containers for shipping of greasy foods and such materials. More consumer corrugated packages are being made today—smaller and fancier. The trend for these packages is toward smaller fluting and the industry is working on plastic coated and waxed containers in this field, to withstand moisture.

These are some reasons for the tremendous growth of corrugated containers which leaders of the industry enumerated to PULP & PAPER here in San Francisco. More than 300 attended the TAPPI conference held Sept. 5-7. As this publication has pointed out in recent months, there has been a mushrooming of new corrugated container plants, most notably in the West.

About the problem of moisture, one corrugating specialist said; "We must have economical moisture proofing to get a paper that won't deteriorate in strength in high humidity warehouses."

Of the total U. S. paper and paperboard production of about 34 million tons in 1960, an estimated 9,000,000 tons went into containers.

Some leaders say the marriage of corrugated packages with plastics, coatings, laminates and impregnations will give the consumer a better package, specifically for his needs. In the past, they explain, corrugated manufacturers got their business at the expense of wooden box manufacturers, but now corrugated containers are finding new fields on their own. The future of the industry, they stress, depends heavily upon its technical progress.

Technical progress was being made on many fronts by the industry, but for this conference, heavy emphasis was upon flexographic printing.

Flexography at the threshhold of the Corrugated Container Industry, by D. E. Tuttle, Interchemical Corp.

This is the first time a full-fledged conference has convened to discuss the application of flexography to printing of corrugated containers, at a time when the machinery, equipment and materials necessary to take the first real step are all actually at hand. Flexography, basically, is a rotary typographic printing process using flexible rubber printing plates, or dies, and fluids, fast drying inks. The process had now established itself as a legitimate, dynamic, quality printing process.

Flexography has been for years the standard printing process in the printed paper bag and wrapper field. It is the dominant printing process in the whole flexible packaging area including cellophanes, polyethylene and other plastic films. It has become virtually the only process now used in printing paper milk containers. Most paper cups are printed by the flexo process; a real dent is being made in the folding box industry and in other than packaging; an important share of all paperbacked books are now produced by flexo.

From a quality standpoint it is generally acknowledged that experts cannot tell, by examining the printed results, whether flexo or paste-type letterpress inks and processes were used. Considerable tone-work is being done flexographically and three and four-color process work is becoming less of a laboratory curiosity and more of an actuality.

Rapid drying inks are a natural answer to search for printing process which will increase overall efficiency by permitting coupled operations, and the flexo process makes possible realization of the long sought dream of print-slot cut-crease-fold-tape or glue in a single operation. In addition, there is no problem of stacking skids of printed containers during the drying cycle, no problem of ink crystallization, greatly simplified scheduling, better customer service possibilities and a host of other possible advantages.

In an industry, therefore, where 10,000 containers may amount to a freight carload, in volume, one would think the industry would have taken advantage of the flexographic process years ago.

Some reasons why it hasn't been done are that some of the necessary ingredients, such as press equipment and accessories, printing plates, inks, were not available.

There may be some things to learn about minimizing the tendency for lint and paper dust to collect and pile on plates, but this may be less of a problem in some cases than in letterpress. In one case press shutdowns for washing lint from plates and rollers were completely eliminated when the job was run flexo, while letterpress required a minimum of 4 to 6 shutdowns per shift.

At present, excellent gloss obtainable with letterpress inks cannot be closely approached on the same stocks with flexo inks. But flexo printing on corrugated containers is new. There is no theoretical reason why high gloss printing cannot be done by the flexo process on corrugated.

Flexographic Printing Equipment For Corrugated, by Henry E. Kulwicki, Koppers Co., Inc.

We have accumulated enough experience to say: A flexographic press 1. Will not be less expensive to buy; 2. Will not require less skilled operators; 3. Will not require less maintenance; 4. Will not reduce your ink bill; 5. Will not make corrugated board any more printable.

What can it offer the boxmaker? We believe the following: 1. Higher run-

ning speeds regardless of coverage; 2. Faster setup of ink film—regardless of coverage; 3. Faster color changes than conventional letterpress design without any washup aids; 4. Ability to provide complete automatic processing from blank to shipping platform; 5. Possibility that hand printing scores will not be necessary; 6. Ability to apply non-skid or other coatings at the press; 7. No smearing or off-setting; 8. No storage space for drying blanks; 9. Economic overall or background printing; 10. Sharp impressions and uniform coverage; 11. The use of more color to offset lack of gloss.

The problem of paper dust may be more acute with flexography. The circulating pump can filter out a considerable amount, but the etched roll may gum up with particles not carried away. Gloss or sheen of present inks depends on paper finish. The higher the gloss of the paper, the higher the gloss of printed results. Overprinting with varnish will give gloss. Flexo inks, being absorbed into the board better, may give better rub resistance than oil base.

Flexographic Printing On Corrugated Fiberboard, by W. J. Hottendorf, president, H&C Container Machinery Corp.

The H&C flexographic printing press prints on corrugated sheets or corrugated boxes, A, B and C flute corrugated board as well as double wall corrugated board. Maximum sheet which can be printed is 38 in. wide and 80 in. long; minimum sheet size is 10 in. wide and 12 in. long.

Sheets are fed manually into the hopper which has a spring kicker bar and adjustable feed gates to allow only one sheet at a time to be advanced from the bottom of the stack in the hopper to the feed rolls. The kicker is timed with the printing cylinders to register the printing on the sheet. One hopper feed roll is a knurled steel roll so it will grip the sheet with very little pressure from the mating rubber covered pull roll.

This combination reduces the possibility of crushing the corrugations of the sheet and weakening the structure of the box. Sheets are fed directly into the printing unit from the hopper feed rolls.

Savings in man hours, material and floor space as well as moving the box consumer 6 to 8 hours closer to his supplier are main factors in making the flexographic process attractive to the box manufacturer.

The economy in flexographic process is due to several advantages: 1. The ink dries in approximately 10 seconds, greatly reducing need for floor space to store sheets while waiting for regular oil ink to dry. 2. Washup is simple and fast; water is pumped through the ink system while the machine is running and plates are cleaned at the same time while the rolls and ink system is cleaned. 3. The amount of waste that usually occurs while getting the fountain keys set on regular oil ink presses is reduced. The flexographic printing process applies the proper amount of ink to the plate, and if the plates are properly registered the first sheet is saleable. 4. Die life is extended; due to the water soluble ink and water washup, printing plates are not subjected to harsh solvents. 5. Pressure from the printing roll to the corrugated board is critical for proper ink coverage; the less pressure applied to the sheet, the sharper the printing. 6. Half tone and line tone discs are as easy to print as regular printing. 7. Solid printing with fine reverse type prints sharp and clear, as well as fine type, followed by solid printing on the same cylinder. 8. Fluorescent inks are available in water base flexographic ink. 9. Flat inks are easier to see as they absorb rather than reflect. 10. Simple ink transfer method to the die and onto the board makes it easy to train operators.

Disadvantages of flexography process for corrugated board are 1. Apparent lack of gloss on flexographic ink is probably the most criticized factor, although some large box consumers are asking for flat inks. 2. A wet trap from one color to the next is difficult, as all inks are compatible and have a tendency to change color on the overlapping area. 3. To overcome the trapping problem, we have incorporated a close register on the machine, but this makes the setup more critical and time consuming on close registers. 4. Because flexographic ink being one so easily transferred, there is a tendency to pick up ink on particles of dust and transfer to the box.

Flexographic Printing on Corrugated Paper Blanks, by Clint Dornbush, Royal Containers Co.

Flexographic printing on corrugated offers a faster and lower cost way of producing a quality box. Our investigation of printing with flexography water base inks indicated they had a great deal to offer: Drying time of 6-10 seconds; printing with a minimum of impression; fine printing detail; simplified ink fountain; water base ink; water washup; washup while setting up the next order; minimum of start-up blank waste; ink costs would not be greater, by this method, and could be less.

What was not known was: Could two or more colors be applied by a continuous operation; rub resistance of ink; customer acceptance. We reasoned that: fast drying would immediately decrease the floor space required for after press storage; fast drying would eventually allow direct feeding into the folder gluer, and would reduce labor and handling costs; ease of washup would reduce time lost on color changes and shut down clean up; minimum of impression and fine detail of printing would increase quality; simplified fountain would reduce maintenance cost.

After a year of experimenting we still believe flexographic printing has the potential to be one of the major methods of printing in the corrugated paper industry.

Since flexo inks dry by absorption they are essentially without gloss and are flat. At first we thought this would be a problem; however, the lack of gloss allows the printing to be read from greater distance and at a wider angle. The flat ink does not cause a glare as does a gloss ink and hence has greater visibility. Also, colors seem to have more depth, possibly because they are in the fibers rather than on the fibers.

When the ink is thoroughly dry its rub resistance is as high as any ink we have used. The greatest single problem we have had is foaming of the inks. Flexographic inks, chemically, are basic rather than acid, which allows formation of bubbles easily. Action of the ink system is such that it tends to add air to the fluid. Ink consumption and ink costs are in line with oil inks.

Maintenance expenses on a flexographic press appears to be about the same as on a conventional machine. Rubber doctor roll will not have to be changed as often as do rubber rolls in a conventional machine, but when it is changed it will be more expensive. Should the rubber roll be damaged or worn it can be reground which adds to its overall life. The rubber roll must be smooth and true for good printing; otherwise it does not doctor uniformly and printing will become uneven.

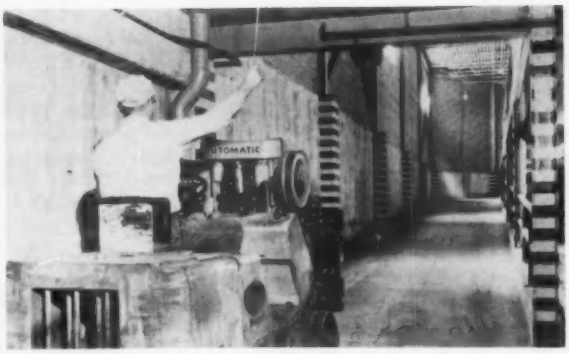
We believe that flexographic printing on corrugated is successful on one-color work, both from a production and customer acceptance point of view. Also that two or more color work on a production basis will soon be possible. Flexographic printing should and will become a major method of printing in the corrugated paper industry. ■

Problem: Safety on busy lift truck ramp

Location: Heavily travelled ramp leading to storage area in basement of bleached board mill of West Virginia Pulp and Paper Co., Covington, Va.
Solution: West Virginia has installed a system of traffic lights to prevent more than one lift truck from using the ramp at one time. An estimated 600 trips a day are made across the 6° ramp.

As the lift truck approaches the ramp, the driver checks a traffic light and proceeds if it is green. Upon entering the ramp, he pulls a conveniently placed cord which changes the light to red at both the top and bottom of the ramp. As he leaves, the driver re-sets the light for the next driver.

This traffic system has allowed West Virginia to use lift trucks safely with maximum efficiency.



Problem: corrosion in ClO_2 reactors

Location: Bowaters Carolina Corp.'s Catawba, S.C. pulp mill.
Solution: By spray-coating three large chlorine dioxide reactors in the newly constructed section of this mill, Bowaters is said to have achieved substantial savings.

The chemical resistant coat, used to protect metal tanks from corrosion by ClO_2 spillage, was Bisphenol A polyester resin and choice of the chemical was based on success in similar applications in several Canadian mills. Coating is expected to last at least 10 years.

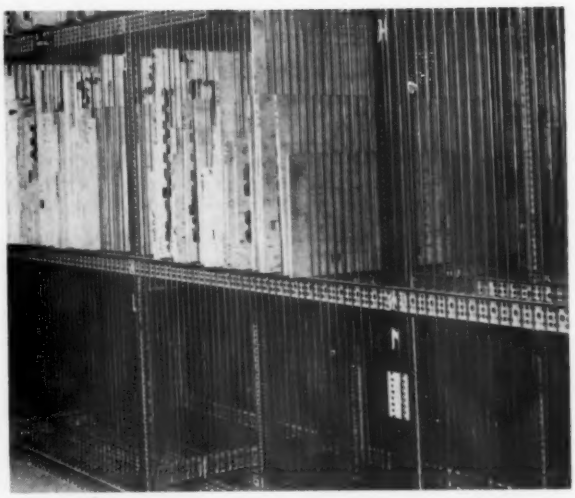
By using the spraying method the Bowater project was completed in about 50% less time than other techniques. Another advantage is ability to provide a uniform coat.

Spray coating was applied by Chemical Fire & Rust Proofing Corp. of Great Neck, N.Y. and Atlanta, Ga.

Problem: Storing die cutting patterns

Location: Corrugated container plant of Mead Containers, Chicago, Ill.
Solution: This customized rack built by two men in eight hours provides a more efficient way to store the die cutting patterns used in the container plant. Dies are now stored in numbered files for quick, easy identification, providing additional advantages of improved housekeeping and more efficient use of floor space.

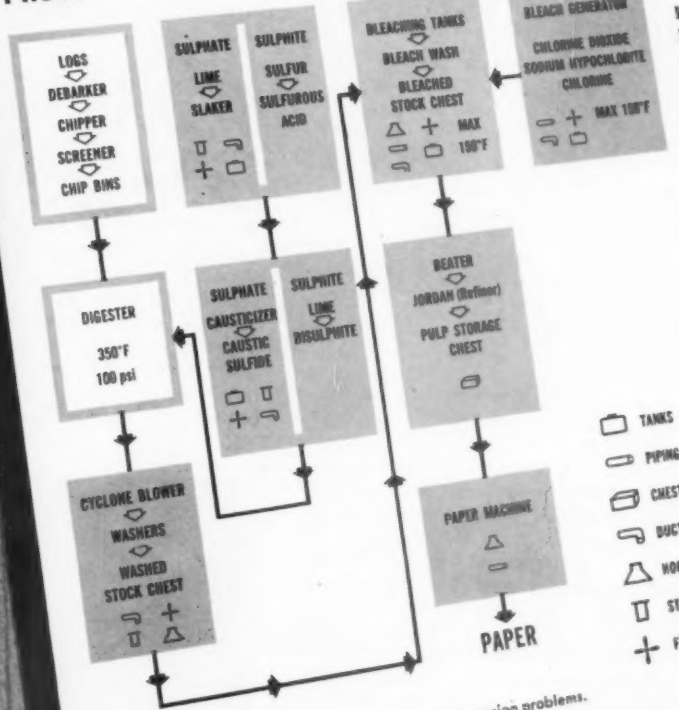
Some 820 ft. of Acme Aim brand slotted angle were used in structural framing. In shearing heavy-duty galvanized steel slotted angle to exact sizes for the high racks, Mead found that the pattern of slots and holes permitted quick, accurate alignment for bolting and simplified assembly. Rigidity and strength of lock-jointing bolting also assures Mead of an extremely durable rack for its heavy, various shaped dies.



CORROSION CONTROL

for the pulp and paper industry!

PROCESS CHART FOR PULP & PAPER MANUFACTURE



Courtesy of Atlas Chemical Industries, Inc.

For thirty-two years Haveg has pioneered in Corrosion Control... *solving corrosion problems.* Today Haveg offers the pulp and paper industry the widest range of corrosion resistant equipment available... anywhere! Haveg's versatile facilities permit the use of many materials – polyesters – epoxies – phenolics – furanes – armored PVC with specially selected and processed chemically inert reinforcements.

For further information, please send for our new illustrated brochure... giving full details on Haveg's role in your growing industry and how Haveg can be of service to you.

Keep Ahead with

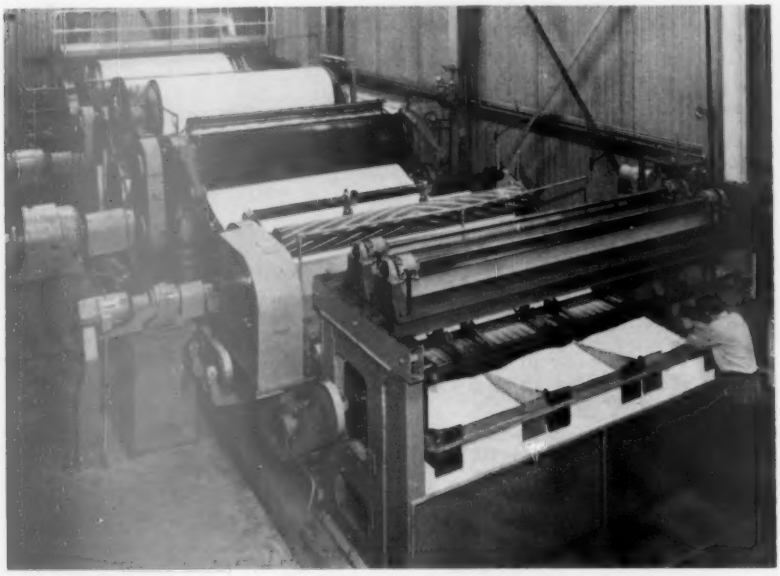
HAVEG CORPORATION

A Subsidiary of Haveg Industries, Inc.

200 Greenbank Road, Wilmington 8, Delaware

HAVEG®

FIRST IN *Engineered* PLASTICS



NEW WET MACHINE, A Sandy Hill-Kamyr, has made possible large-scale sheeting of Neutracel® pulp at Hammermill Paper Co.'s Erie, N.Y., mill.

Hammermill Ups Pulp Shipments from Erie

Erie, Pa. HAMMERMILL PAPER Co. is now able to sheet its Neutracel® pulp at its plant here and ship it to three of its divisions—Beckett Paper Co., at Hamilton, Ohio; Watervliet Paper Co., at Watervliet, Mich.; and its new division, at Oswego, N.Y.

In the spring of 1959 Hammermill put in operation here, a continuous digester of new design to produce neutral sulfite pulp from hardwood by its Neutracel process. (PULP & PAPER, Sept., 1959). Addition of a Sandy Hill-Kamyr feltless wet machine makes possible sheeting and shipping of the pulp (photo, above).

In addition to providing economic benefits, according to the company, the Neutracel pulp has qualities that are highly desirable in producing fine paper, such as "an extraordinary whiteness" and characteristics that make "a particularly opaque and unusually level sheet."

With its new pulping process and with increased pulp mill capacity, Hammermill faced the problem of finding the most economical and efficient method of shipping excess production to the company's subsidiary divisions.

Three men were largely responsible for finding a solution—Kurt Neuenfeldt, chief engineer; Karl E. Vogel, pulp mill superintendent; and Charles C. Hassell, project engineer. According to Mr. Hassell, they studied "all varieties of pulp forming operations before deciding that Sandy Hill's machine would provide the best answer to their pulp drying needs."

Field testing with stock at various temperatures proved that the special characteristics of the Neutracel pulp were more amenable to sheeting under high temperatures. Headbox temperatures are maintained in the range between 100 F and 110 F, while the shower water being applied to the sheet on the mould just ahead of the first press roll is 180 F. The hot water encourages greater water removal and allows higher nip pressures on the press rolls without the danger of crushing.

The wet machine consists of a vacuum former, a first press, a set of pre-dryers and a second press.

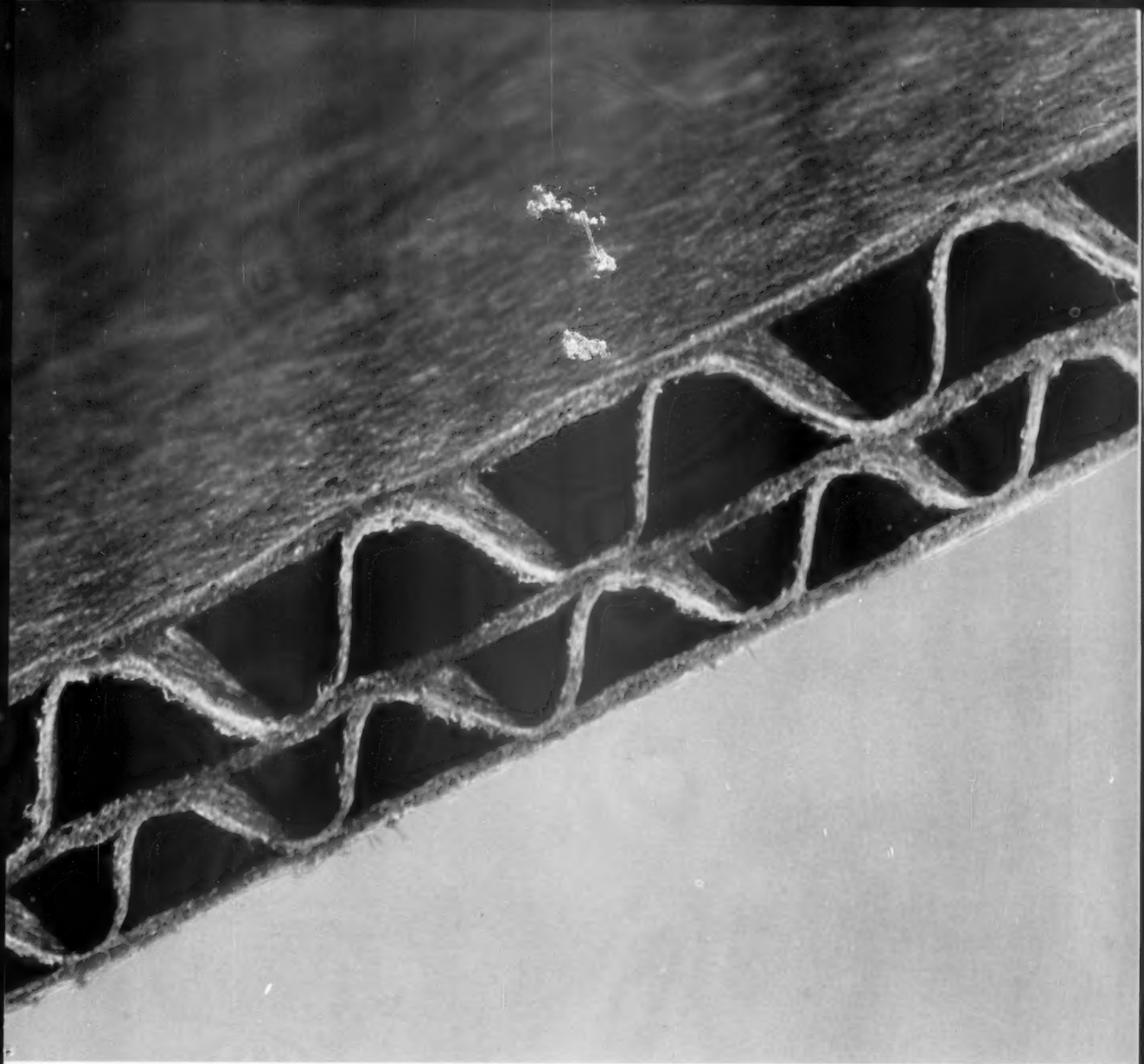
The vacuum former has a 100-in. diameter "hard deck" stainless steel vacuum mould with a 126-in. working width. Two grooved press rolls, operating under high nip pressures on the vacuum mould, assisted by water doctors, remove water and densify the sheet enough to allow self-support between the mould and the first press. The internal drainage system of the mould promotes rapid water removal. The white water from the mould is recirculated to save steam and water, reduce fiber loss.

A lever provides for retracting the doctor blade during sheet threading. Air cylinders for pneumatic lifting and loading of the presses are enclosed within the framing. The press rolls are provided with totally enclosed gears. The controls and control panel were made by Foxboro. The pre-dryer section, which is located between the presses, further heats the sheet to permit greater nip pressure in the second press without the danger of crushing.

The drive is a General Electric sectional electric drive, governed from a control station on the tending side, with an automatic draw control mechanism between each section.

After the pulp is cut, it is stacked in box cars. When the final row of pulp piles has been placed in the car, a narrow space necessarily remains between the rows last stacked. To avoid shifting and resulting damage to the pulp, the spaces are filled with inflatable dunnage bags made by Goodyear Tire and Rubber Co. (photo, below). The deflated bag is slipped into the space as soon as the last pulp pile has been placed and is then inflated to a point where it will prevent any shifting. ■

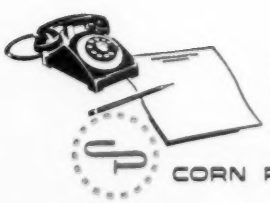
INFLATED DUNNAGE BAGS are put between the last pulp stacks to protect them during shipment.



The toughest, most rugged

corrugated is made with...

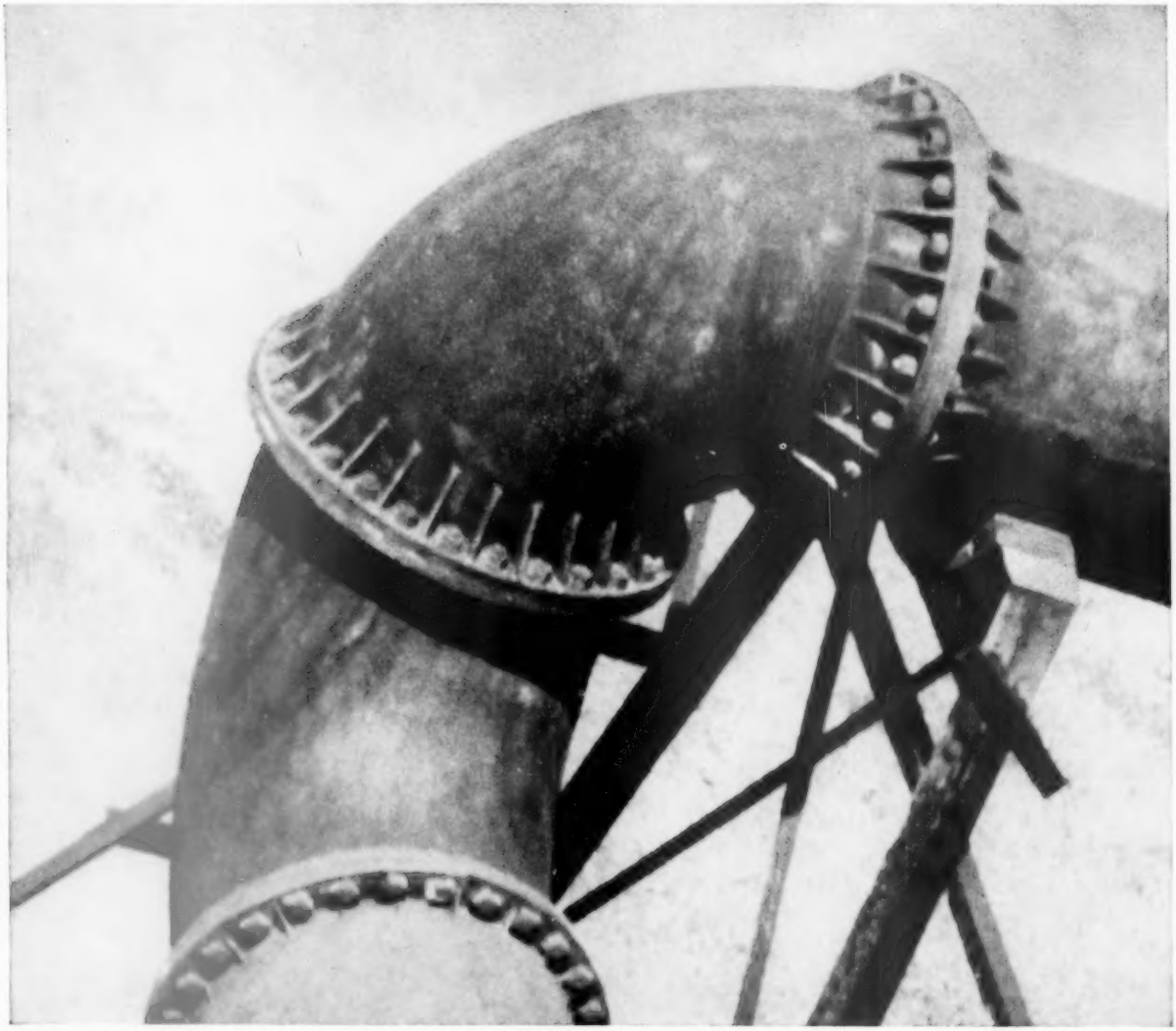
CORAGUM®
starches
LAM-O-DEX®
dextrines and gums



WRITE OR PHONE *Corn Products for expert technical assistance... helpful data on these fine products for Paperboard Manufacturers:*

CORAGUM® · CORAGUM® FD · GLOBE® and FOXHEAD® starches · GLOBE® and GLOBE® LAM-O-DEX® dextrines

CORN PRODUCTS COMPANY INDUSTRIAL DIVISION • 10 East 56 Street, New York 22, N. Y.



Type HH alloy header elbow handles hot SO_2 gas for 15 years

Delivers seven times the service of previous casting at 1800°F

Hot, corrosive SO_2 gas was eating header sections out of sulfur burners every 2 to 2½ years at a sulfite plant operated by one large paper-making company.

Engineers ordered an elbow section cast of type HH* alloy, containing 11 to 14% nickel and 24 to 28% chromium. That was 15 years ago, and the elbow—still in service today—has delivered more than *seven times* the service of previous castings. As a result, engineers at this company have specified type HH alloy replacement sections for their sulfur burners ever since.

Advantages of nickel-alloyed castings. Type HH alloy is one of a family of nickel-containing casting alloys that offers special advantages to the pulp and paper industry. These alloys are easily cast into complex shapes, and are readily available from foundries. By providing superior resistance to high temperatures, corrosion, erosion and caustic and acid environments, these nickel-containing alloys help keep maintenance and parts-replacement costs to a minimum.

Get helpful information on these nickel-containing alloys and find out how they can improve efficiency and cut costs in *your* plant. Write for the comprehensive, 72-page booklet, "Heat Resistant Castings, Corrosion Resistant Castings... Their Engineering Properties and Applications." Ask for booklet A-266.

*Alloy Casting Institute designation

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street New York 5, N. Y.

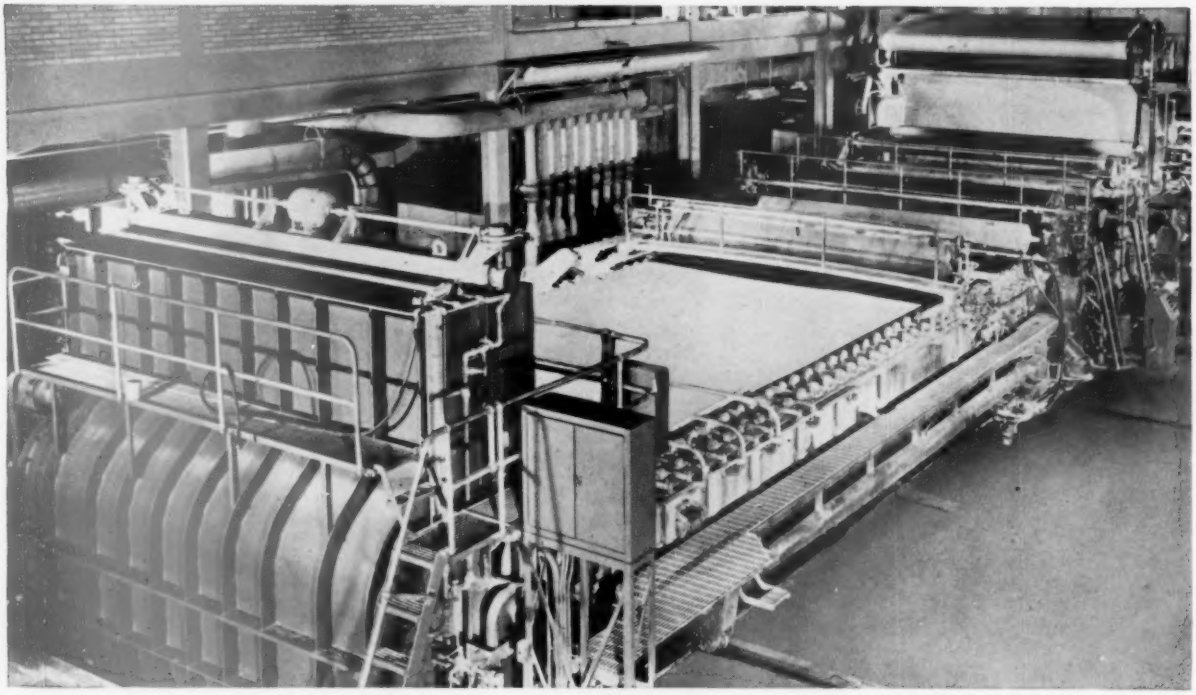
INCO NICKEL

NICKEL MAKES ALLOYS PERFORM BETTER LONGER

The money you can gain by using Accostrength® **Resin** is no illusion—the savings are substantial. You save by greater use of hardwood fibers. This resin increases the wet web strength —thus minimizing paper breaks in the wet end of the machine, reducing costly downtime. You save, too, because Accostrength improves the drainage on the wire, reduces steam requirements in the dryer—making higher production rates possible. Accostrength also lets you save through increased rosin size efficiency by reducing size usage up to 50% while still maintaining sizing specifications; or by producing a more highly sized sheet with the same amount of rosin size input you use now. Why not try the modern way to produce more paper, better paper, stronger paper—at lower cost with Cyanamid's Accostrength Resin. So call your Cyanamid salesman and get the facts.

CYANAMID

AMERICAN CYANAMID COMPANY • PAPER CHEMICALS DEPARTMENT • 30 Rockefeller Plaza, New York 20, N.Y.



Talk About Rugged Individualism!

Any Fourdrinier machine is an individualist. To begin with, it's not something you buy off a shelf. Custom-made, each one's operating characteristics are all its own and like no other.

It is this very individuality . . . and the resulting potential it offers . . . that has inspired the constant research and development of *WISCONSIN* Fourdrinier Wires, which are as notably different from other wires as each machine is from other machines.

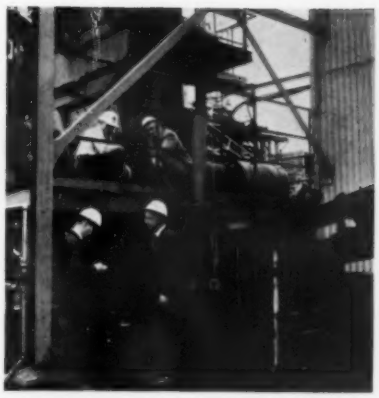
WISCONSIN wires are custom-matched to the unique characteristics of your specific paper making machine. When the necessary characteristics of this "marriage" are satisfied, then, your machine will develop its full, built-in potential for the highest quality production at the lowest possible operating costs.

The addition of the new LEV-L-WEVE* to *WISCONSIN'S* full line of Fourdrinier Wires represents an important break-away from traditional Fourdrinier Wire application. LEV-L-WEVE offers many added advantages in wire life, production quality and lower operating costs. *WISCONSIN'S* specialized methods and machines have been developed in over 60 years of practical experience and continued research to supply the best in Fourdrinier Wires. Call or write, today, and a *WWW* representative will stop and tell you how *WISCONSIN* Fourdrinier Wires can help to produce dollar savings for your mill. Of course, there is no obligation to you.

*Patent Applied For.

WISCONSIN WIRE WORKS
Box 767 • Dept. P-101
Appleton, Wisconsin

More than paper profits from teamwork of millmen, distributor and Jeffrey



On platform at The Champion Paper and Fibre Company plant is W. T. Bobbitt, Pulp and Chemical Manufacturing Group Engineer and S. E. Smartt, Jr., from Behring's Bearing Service, Inc. Below are C. E. Lawall, Jeffrey District Manager and E. G. Bashforth, Buyer for Champion. They are gathering information for equipment needs like those of chain conveyor shown in large photo.

These pictures show four men who know their business. Two work for The Champion Paper and Fibre Company, Pasadena, Texas; one is from the local Jeffrey distributor, Behring's Bearing Service, Inc.; the fourth is a Jeffrey District Manager.

The distributor's representative is a constant visitor at this mill because good service on materials handling components calls for a complete understanding of everyday problems. Often he can bring suggestions based on his own background or—as here—he can call on Jeffrey engineers to help handle problems. This three-way team—men from the mill, distributor, and Jeffrey—results in distributor stocks of exactly the right components ready to go whenever they are needed.

The result is smoother, more efficient mill operation. More important is the smooth operation in the plant, the satisfaction of having expert help and components of highest quality readily available. This kind of three-way teamwork is easy to build. To start, you just call your nearby Jeffrey distributor. The Jeffrey Manufacturing Company, 809 North Fourth St., Columbus 16, Ohio.

If it's conveyed, processed or mined, it's a job for Jeffrey.

JEFFREY

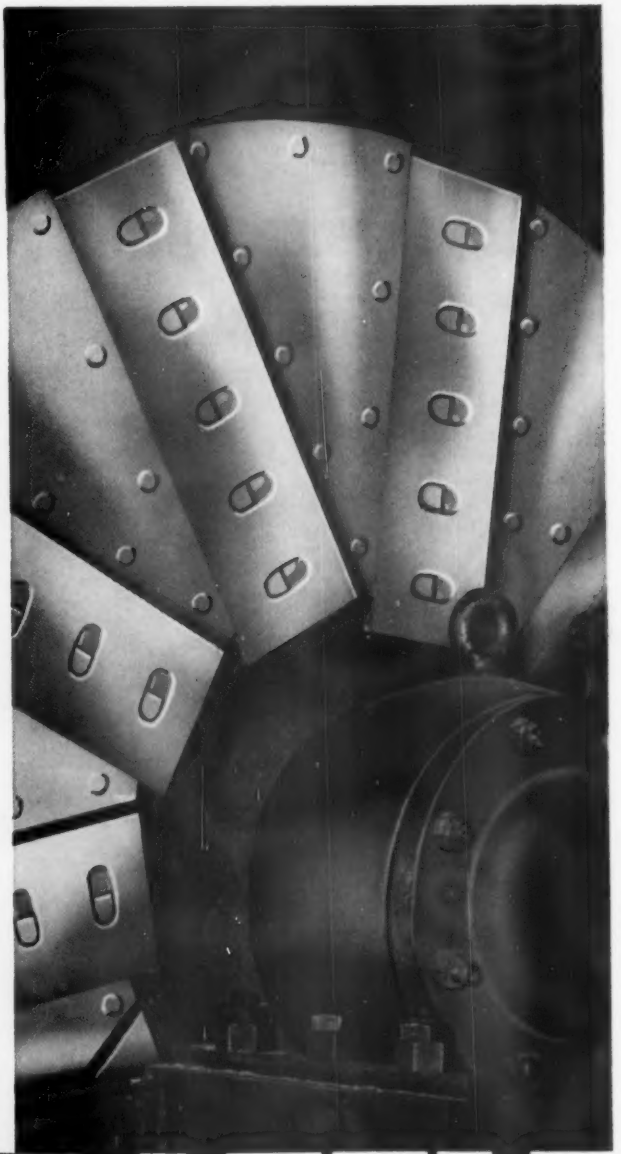
the most wanted chipper knife in the U.S.A. or ABROAD

here's why:

OK VANCHROME steel is used exclusively in Battle Axe chipper knives. This superb American steel, developed by our metallurgists is super hard, yet extremely tough. It is a highly controlled analysis steel, assuring maximum uniformity, a trait not found in cheaper knives.

OK Battle Axe knives have been exhaustingly tested for the last two years in over 30 large mills. In all cases they ran approximately 15% to 25% longer between grinds than previously used knives.

The demand for these knives has required us to carry them in stock for our customers. Many sizes are now stocked in Cincinnati, Ohio and Portland, Oregon. You are assured rapid delivery plus personal service from the Ohio Knife Co. field service man in your area.



OK Battle Axe knives and wear plates on Murco Chipper, Halifax Paper Co.

OK® VANCHROME STEEL BATTLE AXE

For complete information write—Chipper Knives Dept. 126-F

THE OHIO KNIFE CO.

CINCINNATI 23, OHIO

Export Office / Mt. Vernon, N.Y.

Manufacturers of OK HOG KNIVES, VENEER KNIVES, CHIPPER KNIVES, PLANER KNIVES

Multiple Use Benefits Public, Industry Alike

Many companies adopt system as best way of managing their timber lands

WOOD HARVESTING is by far the most important use of the lands of pulp, paper and wood industries firms, but . . .

RECREATION, like swimming . . . and hunting, as well as grazing of livestock are becoming widespread uses

FOREST LAND in increasing amounts is being put under multiple use, the system whereby it is utilized for purposes in addition to wood harvesting. The practice is coming to be seen as a way of achieving maximum development of the nation's forest resources for private and public good.

As the nation's population continues to rise, more woodland will be required for various uses, such as:

- recreation use and wildlife conservation.
- watershed development and soil conservation.
- industrial expansion and highways.
- agriculture.

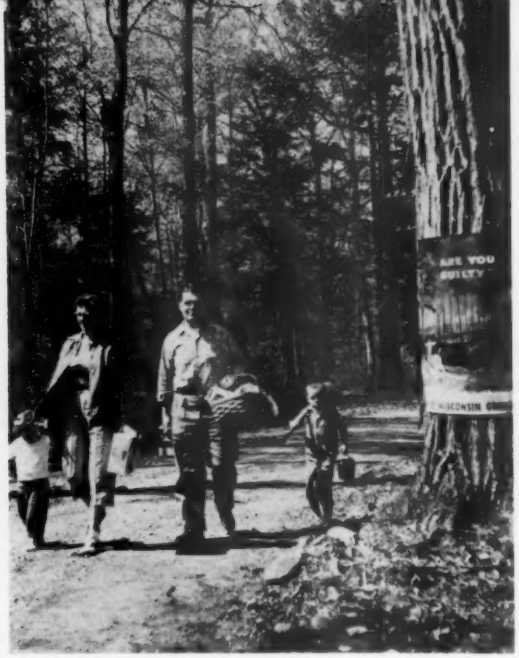
As far as paper companies are concerned, of course, the paramount purpose of forest land still is to grow trees. And with demand for paper and other forest products certain to rise due to the growth of population, this use will assume even more importance than it has had in the past.

There appears to be growing realization in the industry, however, that multiple use of forest land not only is consistent with practices of good harvesting, but also yields the intangible benefits that come with increased public goodwill and the tangible returns that accrue from developing the non-wood resources of forest acreage.

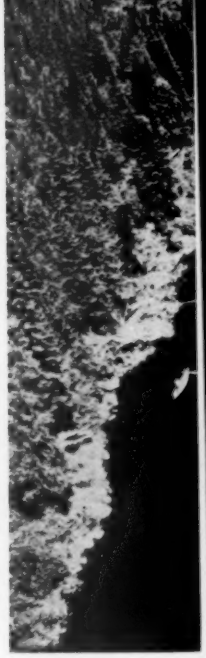
Existing forest land comprises 787,000,000 acres in 50 states. But of this amount, 489,000,000 acres, or less than three acres per capita, are commercially productive. This means that 298,000,000 acres aren't harvested. And of this acreage, 58,000,000 are in wilderness or in otherwise inaccessible or undeveloped areas. The figures are reported in a publication of American Forest Products Industries, Inc., titled "We Must Have Multiple Use Management."

By 2,000, U.S. population is expected to reach some 300 million persons, as compared with 180 million today. Existing acreage is more than adequate to meet the country's current over-all needs. But the big question facing the industry and government alike is whether the constantly increasing demands placed upon our forest resources by this population growth can be satisfied by steadily decreasing acreage.

ON COMPANY LANDS: Angler turns trout . . .



a family goes on a picnic . . .



Boy Scouts

By the turn of the century, according to the AFPI publication, 50 million acres of today's woodland will have been given over to parks and game preserves, highways, urban sprawl, industrial expansion, reservoirs and military reservations.

In addition, the U.S. Dept. of Agriculture reports, 73 million acres of forest may have to be cultivated for food production by 2000. Loss in board feet of timber alone as a result of turning this 123 million acres to other purposes is estimated at 38 billion.

With regard to recreation, the dilemma is compounded by the fact that individuals probably will have more leisure in 40 years than they have now. Annual visits to state and national parks and forests will increase from the present 300 million to around 5 billion by 2000. Now, 40 million hunters and fishermen use U.S. forests annually.

The contention of proponents of multiple use is that only by putting more and more woodland—both privately and government-owned—under this system can industry and public needs be met.

Joseph T. Hazard, naturalist and geographer, states: "Use of forests from fun to firewood is both legitimate and practicable. Locking forests away from the complete needs of mankind, or murdering them through lack of scientific management, are both indefensible. There is no doubting facts. Science, sanity and sense insist that we must use old forests in order that we may grow new ones. In this way alone may we maintain living forests and serve the needs of all living things."

Some forest experts say that wilderness lands, such as the 7.9 million "primitive" acres in National Forests subject to closure by the Wilderness Bill, must also be managed under a multiple use program if future demands on our forests are to be fulfilled.

J. D. Bronson, president of the Western Pine Assn., puts the case for multiple use this way: "When wilderness boundaries are placed beyond the limits of true wilderness and beyond the needs of ample wilderness planning, thereby freezing lands that should be devoted to and are needed for sustained yield under the multiple use concept, then they become matters of extraordinary interest to the people dependent on such lands for their livelihood."

Multiple use also leads to better management practices, for the reason that the system, since it is more complex than single use, requires greater planning and control. Supporters of multiple use note that poorly managed lands, with limited access are in greater danger of destruction by fire, insects and disease. They point to the spruce bark beetle epidemic, which has raged uncontrolled for 15 years in the overmature forests of Colorado and which has destroyed more than 5 billion board feet of timber—enough to build 450,000 homes.

An example of how multiple use management minimizes fire hazards is the grazing of cattle in southern softwood stands to keep grass down. The cattle also check hardwood growth by compacting the soil and thereby inhibiting reproduction of these trees.

Multiple-use managed lands also provide better game refuge. Forest "edge", or openings created by timber harvests, provide excellent habitat for browsing animals. The system, by permitting hunting on forest land, also regulates population of wildlife, which otherwise might overbrowse and starve.

Multiple use recognizes the need for proper water supply management. One of the purposes of thinning timber stands is to replenish the groundwater storehouse—and also keep surface water unpolluted.

Every company doesn't—and can't—carry out multiple use in the same way. Here, as described at a recent meeting of the Western Technical Committee, American Pulpwood Assn., at Longview, Wash., is how some companies are putting their lands to varied uses.

Removal of over-mature, and disease-infected stands by cutting methods, such as pre-logging and re-logging, is emphasized by Puget Sound Pulp & Paper Co. In this way, the company fully utilizes existing stands. C. V. Sahlin, timber department manager, said further that products used by the mill and sold on the market include bean stakes, piling, sawlogs, peeler logs, cedar shake boards, fence posts, fuel wood, poles,

canoe down a river . . .

minerals are mined . . .

deer are released to increase herd

gravel, building stone, cascara bark and greenery.

Many companies are expanding cultivation and marketing of Christmas trees. This year Puget is conducting a Christmas tree culture experiment as an adjunct to pre-commercial thinnings in young silver fir stands.

Most large companies have permitted some form of public recreation on their lands for many years. The upsurge in population is certain to bring more demands for outdoor leisure in the forests. Puget allows free hunting and fishing, except during periods of extreme fire hazard or during bad weather. In addition, the company has provided access to a fishing area and constructed, with government help, a roadside camp.

City water is supplied primarily from company-owned lands. The water is continuously tested for purity. As a further means of maintaining purity and cutting down on stream pollution, the company's logging contractors have been issued a pamphlet discussing the interrelationship of timber operations and water supply.

The case for multiple use is strengthened not only by increasing demands for the secondary products of the forest but also by the new uses to which the tree is being put by ingenious management.

Pulp is made from waste of saw mills at the California division of Diamond National Corp., according to R. D. Roseberry, corporate engineer. Consideration is being given to making groundwood-type pulp from second-growth thinnings. The company may also market bark for soil conditioning. And studies are under way to expand use of minor species such as the California black oak.

Mr. Roseberry said it is a waste of resources not to utilize all the goods and services available from forest lands, if full utilization is feasible. But, to maintain forests for maximum benefit, he added, special uses must be eliminated in some areas in favor of the primary uses.

Diamond National permits public recreation on its forest lands without charge. Permanent Scout camps (a use that many companies provide) are equipped by Diamond National with swimming pools. And Scouts harvest Christmas trees for sale, the company assisting with this operation.

Where logging is carried out near state highways, the company leaves a full canopy of trees parallel to the road.

The company also allows California ranchers to graze cattle on its land under permit during the dry summer months, when feed is in short supply

Controlled prospecting is permitted. Presently cinders and gravel are taken from company lands, and studies are being made to determine other mineral potentials.

Trees are clear-cut in blocks to reduce fire hazard and insure a seed source for new trees on holdings of Rayonier Inc.

W. L. Vincent, land department manager of the Northwest Timber Division, told the meeting care is taken to see that the best use is found for each tree removed. Cedar logs are sold to finishing mills and salvage cedar is made into shingle bolts, shakeboards, grape stakes, and fence posts and pickets.

Some Christmas trees are harvested in thin low site Douglas fir and pine areas. Seed cones are harvested under contract.

Other measures taken by the company: staggered settings to provide cover in watersheds, thus preventing rapid water runoff and soil erosion; road construction, primarily for logging operations, but also with the purpose of providing access for protection and administrative purposes; for hunters and fishermen, roadside parks are maintained. The parks are open from May until late November. During the hunting season, ads in local papers encourage hunters to use company lands.

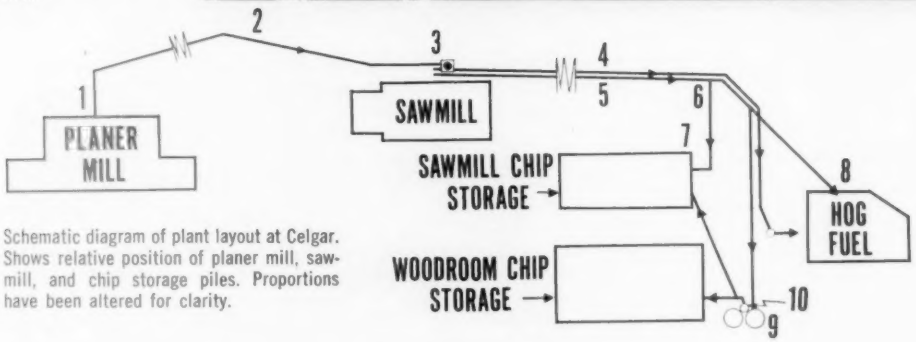
Boat launching facilities and year-round camping are other recreational aspects of the company's multiple-use program.

Cedar posts and poles are harvested by small independent producers on lands owned by Potlatch Forests. R. G. Fox, chief forester with the company, said Christmas trees, formerly on a free home-use-harvest-basis, may now be leased to commercial interests as a result of two test contracts last year. The company also manufactures lumber specialty items, like fuel briquettes and fertilizer.

Rock, clay and barite mineral rights are leased. Cattle and sheep grazing is allowed for a charge. Homesite land is leased along company roads in backwoods areas. ■

RADER at CELGAR

1. Blower and feeder at planer mill.
2. Pneumatic line from planer mill to surge bin at sawmill. Capacity 43 tons per hour. Length 1700 ft.
3. Two blowers and feeders at sawmill.
4. Pneumatic line for sawmill waste and planer waste. Capacity 70 tons per hour. Length 2200 feet.
5. Pneumatic line for wood chips. Capacity 60 tons per tour. Length 2300 feet.
6. Three-way automatic valve diverting chips to:
7. Sawmill chip storage.
8. Hog fuel storage.
9. Silo at pulp mill.
10. Blower and feeder at pulp mill sending chips to sawmill chip storage, woodroom chip storage and chip silos.



Schematic diagram of plant layout at Celgar. Shows relative position of planer mill, sawmill, and chip storage piles. Proportions have been altered for clarity.

Flexibility Is Keynote of Rader Installation at Celgar

A complex Rader pneumatic installation at the pulp mill and new sawmill of Celgar Limited at Castlegar, B. C., provides a continuous flow of chips and hog fuel over considerable distances, to several destinations, and with a minimum of human attention.

Planer waste is blown from the planer mill to a surge bin at the sawmill, which also receives the sawmill waste; from there the material is blown to the pulp mill's hog fuel storage.

Chips are carried on a second line from the sawmill to a three-way valve near the pulp mill. One discharge line leads to sawmill chip storage; the second leads to storage silos at the pulp mill, while the third leads to the hog fuel storage pile.

The systems described above have just been completed. Another system at the pulp mill, built earlier, blows chips either to the silos, or to the sawmill chip or woodroom chip storage piles.

Two other independent Rader systems at Celgar perform special missions. One handles knots and reject materials, which are blown to a chip bin for re-use, or to a fuel storage pile; another unloads limestone by suction from rail cars and transports it to a storage silo.

* * *

Rader engineers can custom-design pneumatic conveying systems for any pattern of chip flow, and for moving many other materials. Write or phone for information.

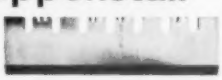
High Pressure Pneumatic Conveying Equipment

RADER PNEUMATICS

1739 N. E. 42nd Ave. • Portland 13, Oregon

BOSTON EUREKA, CALIF. LOCKPORT, ILL. LOS ANGELES
MEMPHIS SYRACUSE VANCOUVER, B.C. PEMBROKE, ONT.

Uniform Chips with longer lasting Heppenstall chipper knives



Heppenstall has the exact knives for your chipper. Exact because they give you uniform chips, cord after cord—help you keep cooking time consistent for every batch. Exact because Heppenstall chipper knives last longer, keep costly down time to a minimum.

For more specific information, contact your Heppenstall representative or write us direct.

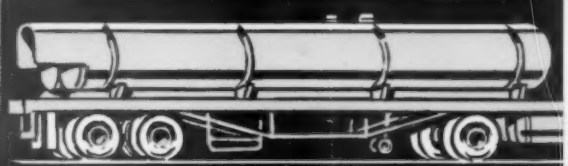
HEPPENSTALL COMPANY
PITTSBURGH 1, PA.
Plants: Pittsburgh & New Brighton, Pa. • Bridgeport, Conn.

MIDVALE-HEPPENSTALL COMPANY
NICETOWN, PHILADELPHIA 40, PA.

H M H

LIQUID
SO_2

WE ARE BASIC PRODUCERS OF SULFUR CHEMICALS



Our basic position enables us to control the PURITY of our Sulfur Dioxide from the raw materials we mine to the finished product we deliver to you.

Available in:

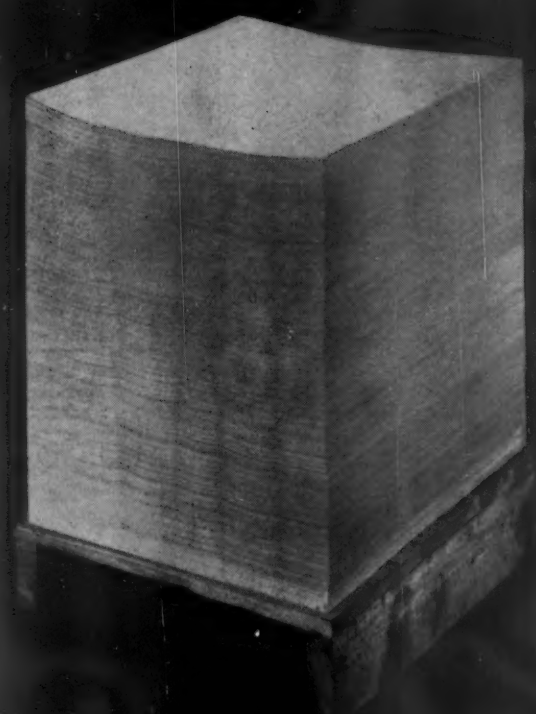
- Tank Cars
- Tank Trucks
- Ton Drums
- Cylinders

To the Pulp Industry we offer a dependable source of highest purity Sulfur Dioxide.

For further information
Phone JAckson 3-5024
or Write.

TC TENNESSEE CORPORATION
612-629 Grant Building, Atlanta 3, Georgia

Want more production?



Announcing the Langston-Masson Sheet Cutter...

This is the cutter that gives you more positive control over your paper—especially at the three vital points: around the knife, at the overlapping station, and at the discharge. As a result, the Langston-Masson Sheet Cutter can be operated at higher speeds, and sheets can be laid evenly in smooth-sided stacks.

Calibrated sheet length indicator

Easy setup boosts productivity further. Adjustments are on the drive side, easy to reach and set. Instead of having to cut and try to get right sheet length, you simply refer to the calibrated sheet length indicator. This not only saves time, it reduces waste.

No trimming

Langston-patented precision shear-type slitters are standard on this machine. They are guaranteed to run true within .001 in., thus minimizing variations in sheet width. Also they keep paper dust to a minimum. The combination of true slitting, accurate cutting, and precision laying provided by this machine means that in many cases you can ship the paper as it is taken from the skid. Trimming is normally not necessary. Even where it is, trim allowances can be kept to a minimum. Again, this means less waste of paper and less handling cost per order.

Proven design

The Langston-Masson Sheet Cutter is being made by Langston under a license agreement with Masson-Scott, Ltd., of England. Paper mills in Canada and

Get a Langston-Masson Sheet Cutter

turns out more paper per hour, reduces waste

throughout the world are using the machine now and testify to the high merits of its design. Langston has incorporated several additional engineering changes as required for operation in North America.

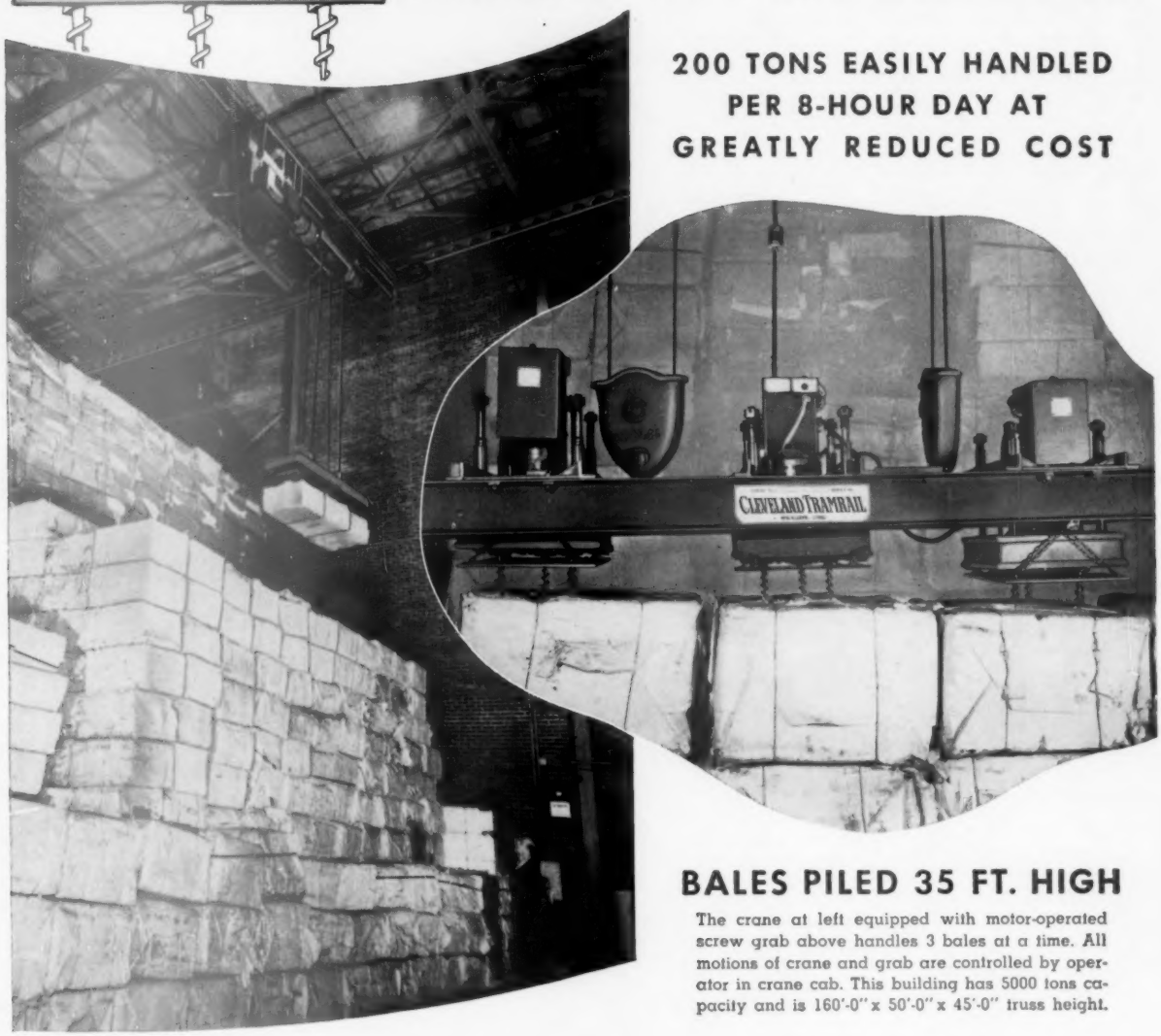
Let us give you complete information on the Langston-Masson Sheet Cutter. Discover how much more you can produce in the same time and floor space, and how much you can reduce waste. Write Samuel M. Langston Co., 6th & Jefferson Sts., Camden 4, N.J.

Langston

LEADERSHIP . . . BY DESIGN

SCREW GRAB REDUCES PULP HANDLING COSTS

200 TONS EASILY HANDLED PER 8-HOUR DAY AT GREATLY REDUCED COST



BALES PILED 35 FT. HIGH

The crane at left equipped with motor-operated screw grab above handles 3 bales at a time. All motions of crane and grab are controlled by operator in crane cab. This building has 5000 tons capacity and is 160'-0" x 50'-0" x 45'-0" truss height.

Man-hours spent handling bales of pulp are greatly reduced when a Cleveland Tramrail overhead crane and screw grab are used. And more pounds are stored per square foot, because no aisleways are required and also because of high piling. Safety is improved.

As a result, great savings are made on both warehousing and handling of pulp. Equipment like this pays for itself in a surprisingly short time. Let us give you details.

GET THIS BOOKLET!

Gives details on a 5000 ton and a 1100 ton pulp warehouse.

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
6717 East 287th Street, Wickliffe, Ohio

CLEVELAND TRAMRAIL
OVERHEAD MATERIALS HANDLING EQUIPMENT

Let TITANOX-A-CG
help make sales through the mails

The eagerly awaited catalog can be a star salesman, especially when well known TITANOX titanium dioxide pigment has boosted the brightness and opacity of its pages while keeping weight down. And for outstanding pages that require coated stock there is new TITANOX-A-CG.

TITANOX-A-CG is the coating grade anatase titanium dioxide pigment so well suited to the high solids, high speed coatings applied by all modern coating methods including the trailing blade coater. This pigment is equally suitable to other processes such as size press and calender application.

In addition to high whiteness, brightness and opacity, TITANOX-A-CG readily yields high gloss. This pigment is ideal for the fast, continuous production of paper surfaces of uninterrupted smoothness.

We will be glad to discuss with you the type of TITANOX best suited to solve your white pigmentation problems. Titanium Pigment Corporation, 111 Broadway, New York 6, N. Y.; offices and warehouses in principal cities. In Canada: Canadian Titanium Pigments, Ltd., Montreal.

TITANIUM PIGMENT CORPORATION
SUBSIDIARY OF NATIONAL LEAD COMPANY

TITANOX

7090

ideas and news:

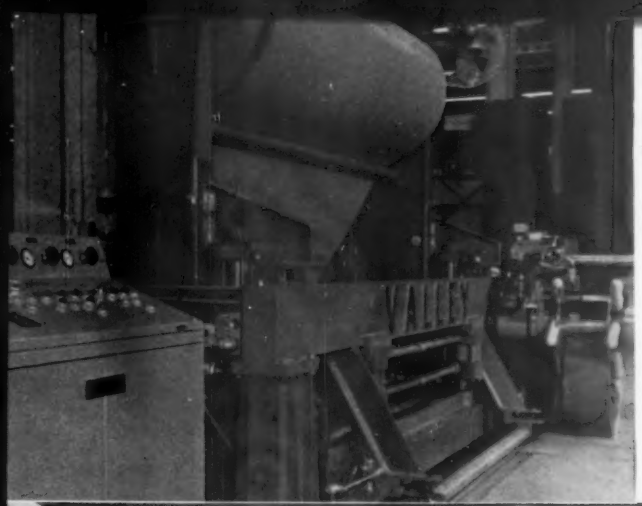
Open motor shrugs off everything but work: This 5-hp SUPER-SEAL motor performs with unfailing dependability . . . even though covered with a foamy pulp mixture. Twice a day, it gets cleaned — with a hose. POXEAL insulation resists moisture, dust and most contaminants . . . enabled this open motor to replace a TEFC motor that had to be frequently rewound.

Control centers cut costs: You save space, simplify wiring and reduce inspection and maintenance expenses with new Allis-Chalmers low-voltage motor control centers. Plug-in terminal blocks and drawout construction cut inspection time by making it quick and easy to withdraw or remove control units. Pushbuttons and pilot lights are mounted on the removable frames to eliminate failures common with hinged wiring. Special connectors make it impossible for bus connections to loosen. Extra-heavy bus bracing makes additional bracing unnecessary when you add capacity.

Which of these productive ideas could be working for you?

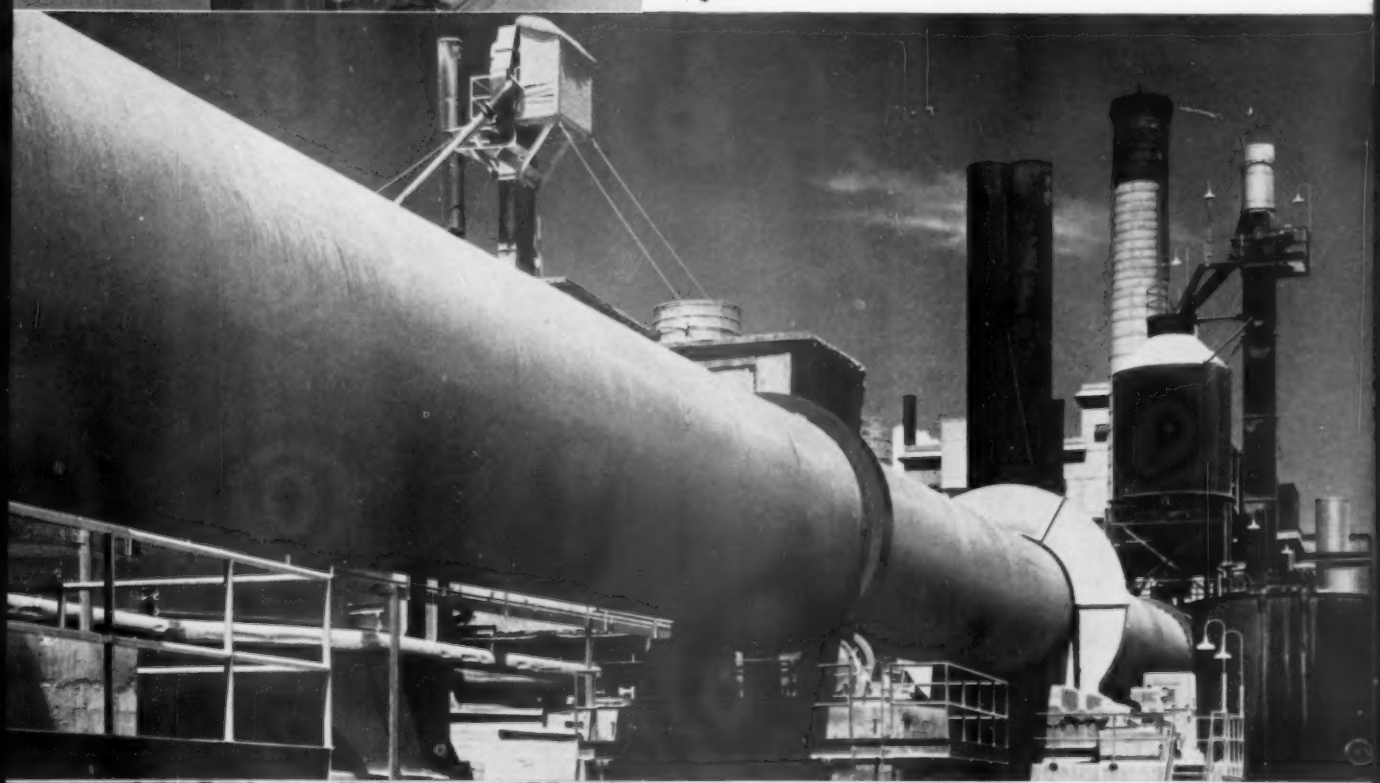
An open motor that shrugs off a soaking. A system that wraps rolls automatically. A pump that instantly matches flow to demand. These examples demonstrate the extra value that is a standard with A-C . . . the greater efficiency and the added productivity which are yours when you buy A-C products, systems and services. Call your Allis-Chalmers representative for details on A-C "worth-more" features. Or write Allis-Chalmers, Industries Group, 903 South 70th Street, Milwaukee 1, Wisconsin.

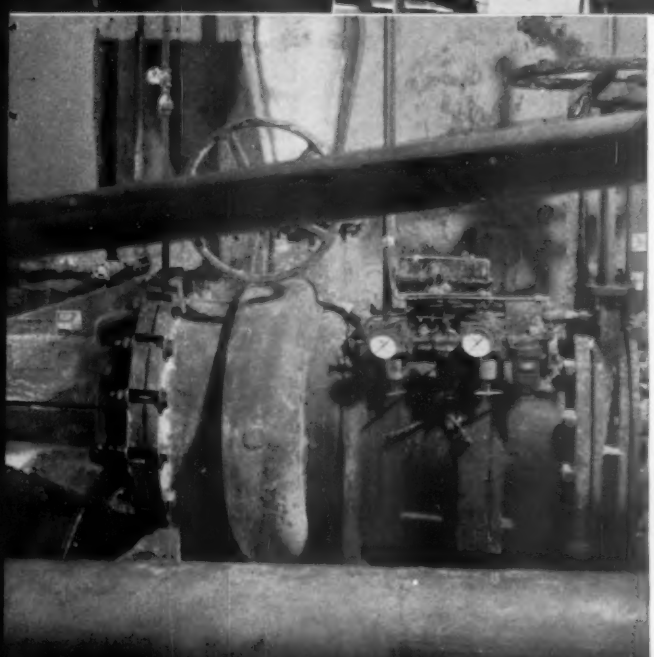
Super-Seal, Poxeal, and ACAP are Allis-Chalmers trademarks.



New "pushbutton" system wraps a roll-a-minute: Valley Iron Works Corporation (an A-C affiliate) has developed an automatic system that can wrap more than 60 rolls an hour. It cuts wrapping paper to proper size, applies it to the roll, and crimps the ends for application of headers. The system can handle rolls of varying sizes in succession — face lengths of 7 to 112 inches, diameters from 15 to 42 inches — other sizes are available.

This 275-ft "oven" bakes a batch of savings: This giant Allis-Chalmers rotary kiln gulps in huge quantities of waste lime sludge . . . converts it into usable lime of uniform high quality. Because of a unique feeding system, this unit can process both sludge and raw limestone (if needed) simultaneously.





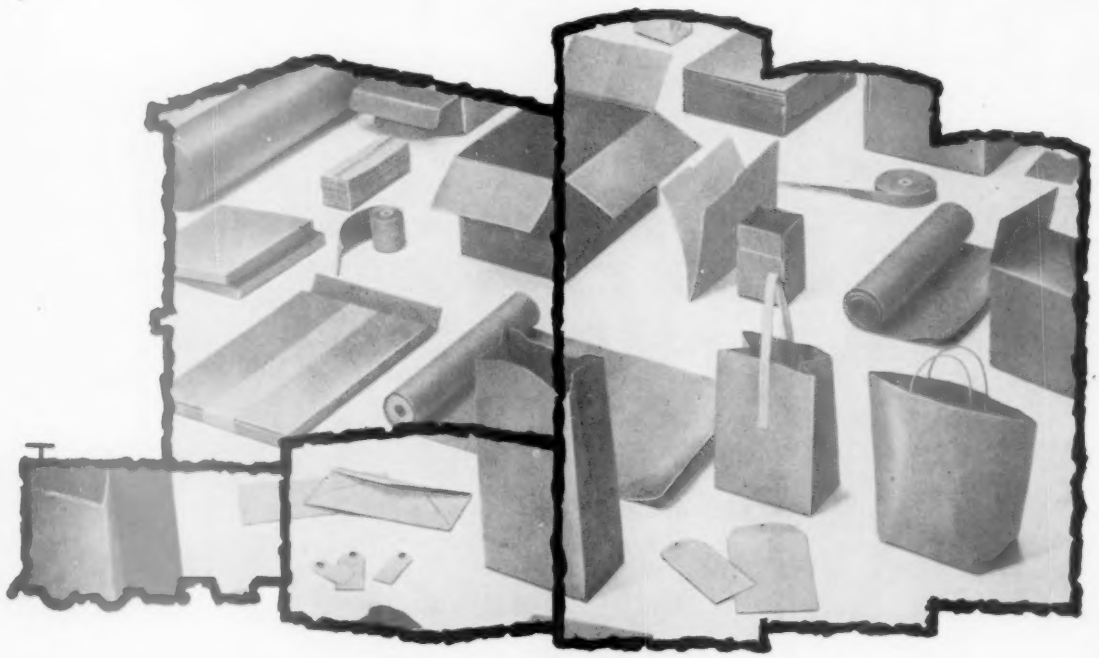
***ACAP* pump regulates flow instantly** . . . without valves or varying pump speed. Proven ACAP (Adjustable Capacity, Adjustable Pressure) principle with internal pneumatic control automatically matches flow to demand. Regulation of flow through changing impeller clearances eliminates binding, plugging, saves power, allows systems to operate at high efficiency regardless of demand.

ALLIS-CHALMERS PRODUCTS FOR THE PAPER INDUSTRY: Look to Allis-Chalmers for compressors; controls; earth-moving equipment; industrial systems; lift trucks; motors; papermaking machinery; pumps; rectifiers; electrical generation and distribution equipment; tractors; transformers; unit substations; valves; water-conditioning equipment. A-1544

ALLIS-CHALMERS

WEST END

advance planning OF EXPANDED SALT CAKE PRODUCTION ANTICIPATES INDUSTRY'S GROWING NEEDS



WEST END demonstrates its complete reliability as a major source by the continuing enlargement of its production facilities devoted to the manufacture of highest quality salt cake as a prime product. Independent of other product production and located at the site of vast natural raw material supply, West End is solidly qualified to handle the complete requirements of customers dependably, economically and efficiently.

Stauffer CHEMICALS

WEST END CHEMICAL COMPANY • DIVISION OF STAUFFER CHEMICAL COMPANY

636 CALIFORNIA STREET, SAN FRANCISCO, CALIFORNIA • PLANT: WESTEND, CALIFORNIA

Partial view of Puget's main plant, Bellingham, Washington.

PUGET PULP *

puts top quality in fine paper

PUGET SOUND PULP & TIMBER CO.
BELLINGHAM • WASHINGTON

* A SOFTWOOD, CHLORINE DIOXIDE BLEACHED SULPHITE PULP

. . . LITERATURE

Air processing equipment
and web processing machinery is subject of new bulletin. Also included are Ross-Waldron coordinated equipment and research facilities for the paper industry.
Bulletin: No. RW-600. Supplier: Waldron-Hartig Div., Midland-Ross Corp., Box 791, Brunswick, N.J.

Reactor-clarifier treatment
units are described in a full color illustrated bulletin. Principles of operation that make reactor-clarifier units versatile and sensitive treatment units are detailed. Wash drawings show flow patterns through the reaction and clarification compartments, by means of which coagulation, flocculation, recirculation and clarification are achieved.
Bulletin: SM-1006. The Eimco Corp., Box 300, Salt Lake City 10, Utah.

Direct-mounted motors
on low-head screen saves headroom, reduces belt cost and wear and simplifies maintenance, according to the manufacturer. This mount eliminates overhead superstructures, gantry-type motor supports, and belt tensioning and alignment problems, the bulletin states.
Write: Allis-Chalmers, Milwaukee 1, Wis.

Polyvinyl alcohols
in two grades, super hydrolized and fully hydrolized Vinol 230, are highlighted in 16-page bulletin. Paper industry uses, physical properties and handling are detailed.
Write: Air Reduction Chemical & Carbide Co., 150 East 42nd St., N.Y.C.

Pipe Friction Manual
in its third edition is an extension and rearrangement of the earlier handbook. Included are formulas, friction and roughness factor charts, viscosity tables and related information. The manual can be used as an adjunct engineering course text. It is distributed at near publication cost, $2.00 in the U.S., or $2.40 abroad.
Write: Hydraulic Institute, 122 East 42nd St., New York 17, N.Y.

Silicone anti-foam agents
for both aqueous and non-aqueous systems used in the paper industry are described with data that simplify selection of the right foam for the job.
Write: Hodag Chemical Corp., 7247 N. Central Park, Skokie, Ill.

Machine drive speeds
and processes can be automatically controlled by pneumatic instrumentation, as described in bulletin G-2500. The air control unit is reported to control liquid level, line pressure, process temperature, steam pressure and motor loading.
Write: Reliance Electric and Engineering Co., Cleveland 17, Ohio.

Automatic caliper
records a continuous graphic picture of paper and board thickness across full length of sheet. The Foxboro Caliper Profiler was designed to replace the hand caliper. Foxboro Co., Foxboro, Mass. will send bulletin on request.

Processing chemicals
for the paper industry are available in condensed listing from the company's industrial division. Included are resin and wax emulsions, water-soluble lubricants, softeners and hydrosulfates. Bulletin ISP-50 is available from Nopco Chemical Co., 60 Park Place, Newark 1, N.J.

Crushing, shredding
and pre-crushing of lumpy chemicals, copra, clay, coke, shells, etc., where a minimum of fines is desired, is accomplished by the company's No. 7-AB Crusher-Spreader as described in Bulletin G-6. Available from The Bauer Bros. Co., Springfield, Ohio.

Technical pocket folder
giving data on either Fourdrinier, cylinder or converter operations is a series of 14 data sheets covering such subjects as dryers, felt conditioning, creeping paper, setting the bow, calenders, and cutters and slitters.
Write: Mount Hope Machinery Co., Taunton, Mass.

. . . CHEMICALS

New polypropylene
shows promise, the company says, in hot-melt adhesive blends for laminating and sealing. The product is compatible with a number of resins, with most waxes and is soluble in most aromatic and aliphatic solvents. The company's amorphous polypropene is available as a tacky elastomer with 105 density, or in a form similar to moderately heavy grease with 75 density. Samples and description of chemical properties are available from the company.
Supplier: Eastman Chemical Products, Inc., Chemicals Div., Kingsport, Tenn.

Polyethylene resins
with high density now are available for paper coatings. These "Hi-fax" resins, in the 0.962 density range, make possible coatings in relatively thin sections without becoming brittle or flex-cracking, the company says. The product is an advance over the company's original polyethylene which pioneered development of plastic detergent bottles.
Supplier: Hercules Powder Co., 910 Market St., Wilmington 99, Del.

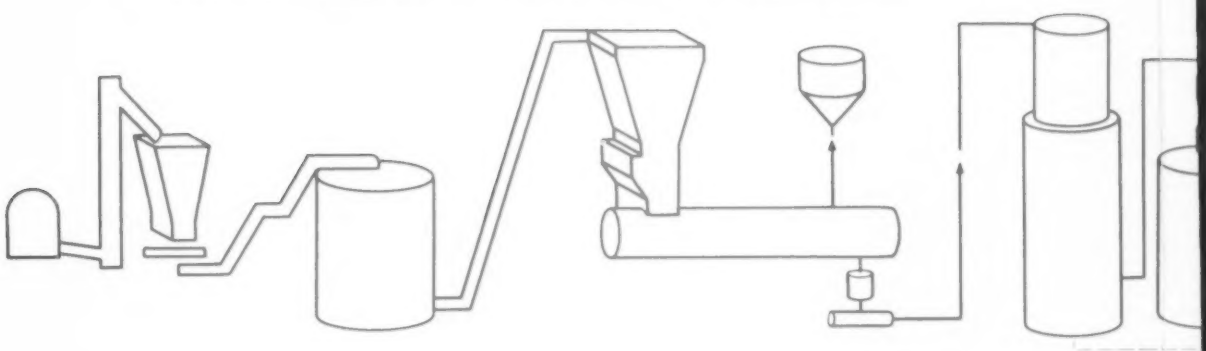
Overprint lacquer coatings
were specifically developed for overwraps, bag closures, and packaging pouches, but have other applications for paper, aluminum and foil. "SO-785" gives high-gloss, clear film coating, the company says. Coating can be air or tunnel dried in three to four seconds at 280° F. Storage of lacquer is listed at three to six months, and the material is not affected by freezing.
Supplier: The Borden Chemical Co., Dept. H, 350 Madison Ave., New York 17, N.Y.

Improved oxidized potato starches
called Arogums are now being produced by Morningstar-Paisley, Inc. The typical long texture of potato starch is said to give Arogums an improved film structure particularly desirable in surface sizing and coating. They come in various viscosities to meet requirements for tub, calender and size press operations.
Applications: For tub sizing or at size press, Arogums are said to lay the surface fiber and coat with a tough flexible film to improve writing and printing surface; also for improvement in sheet strength. For calender sizing, they improve printability and reduce penetration of gloss inks in paperboard.
Supplier: Morningstar-Paisley, Inc., 630 West 51 St., New York 19, N.Y.

Fillers for paper
achieved with silicate and silica pigments are patented products available from this company. Patents explain beneficial effect of using silicate and silica pigment and titanium dioxide for obtaining increased brightness and opacity in paper, above values obtained through use of either pigment by itself. The company says this "greater than additive" effect improves efficient use of titanium dioxide and reduces cost of filler used for paper.
Supplier: Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 22, Pa.

Paper coating pigments
and fillers of fine particle size hydrated aluminum are now being made by Aluminum Co. of America at Bauxite, Ark. The light fluffy fine particles of alumina previously made at Alcoa's East St. Louis, Ill. works, are being closed.

It's Foxboro instrumentation . . .



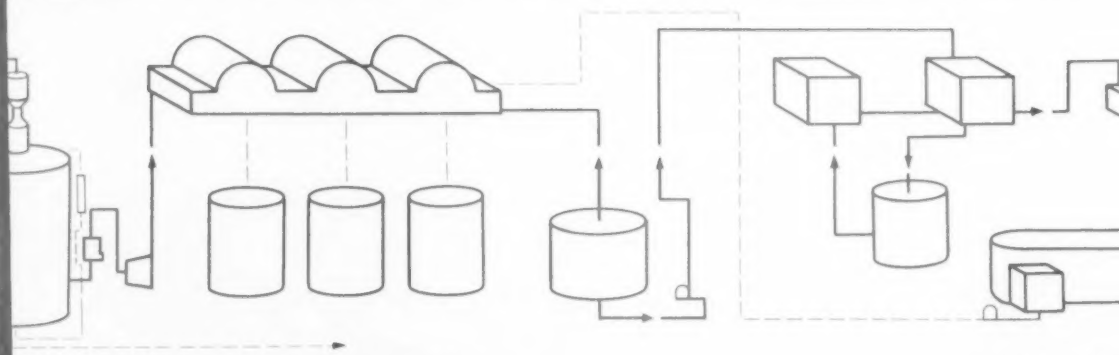
DIGESTING . . .

Continental Can's pace-setting new mill in Augusta, Georgia, turns out 350 tons of high grade bleached and coated foodboard every day. A key to its continuous performance — Foxboro instrumentation in hundreds of process control loops from the wood yard to the reel.

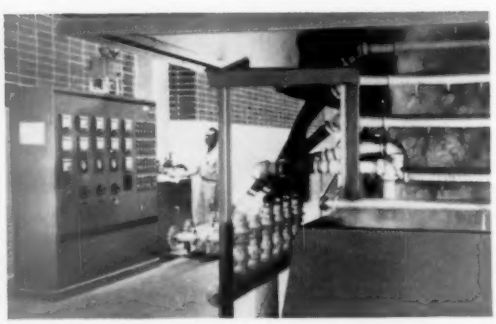
See for yourself how Foxboro control smoothly integrates this new mill — right down the entire process line.

Foxboro Digester Control Panel, with graphic representation of 350-ton-per-day Kamyr continuous digester system, makes cooking operations easy to see. Panel provides complete remote operation for all pumps, feeders, and valves.

right down the entire process line at Conti

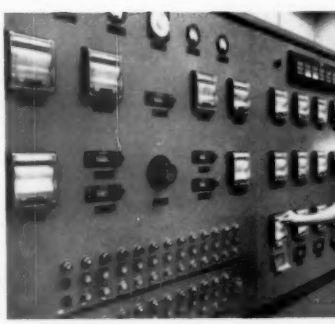


WASHING . . .

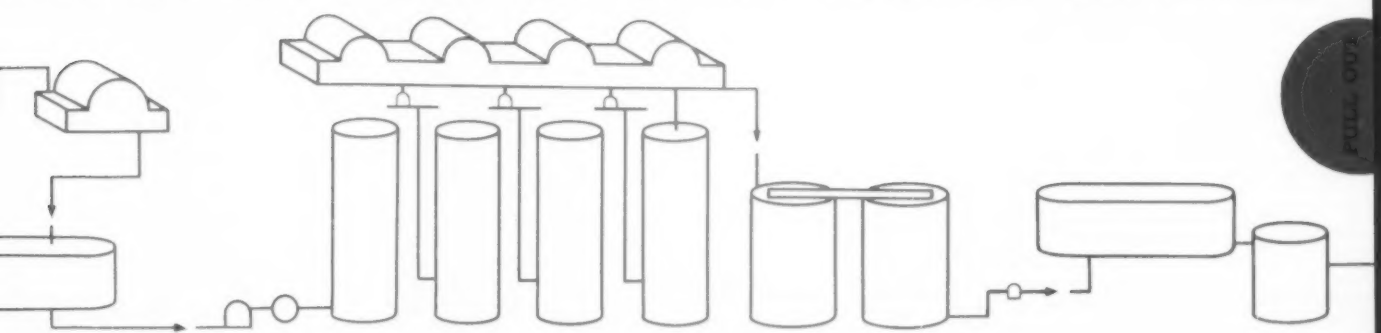


Foxboro Washer Control Panel for three-stage brown stock washer. The panel uses conductivity measurement of weak filtrate as the basis for automatic regulation of hot water shower flow to third stage washer at the mill.

BLEAC



tinental Can's new $45 million bleached board mill

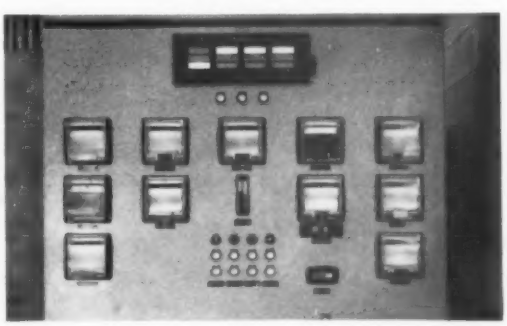


PULL OUT

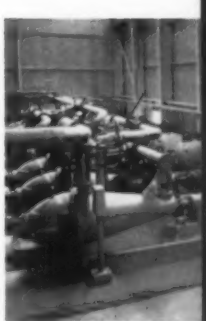
ACHING . . .

Foxboro Main Bleach Control Panel for four-stage bleach plant features compact Consotrol* Recorders with easy-to-use folding charts. Operating consoles (not shown) provide for control of speed and flows at each washer.

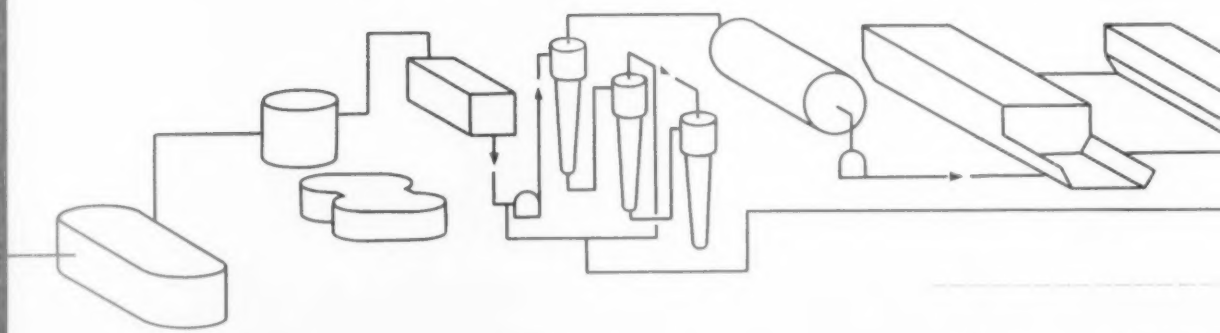
CHEMICAL MAKE-UP . . .



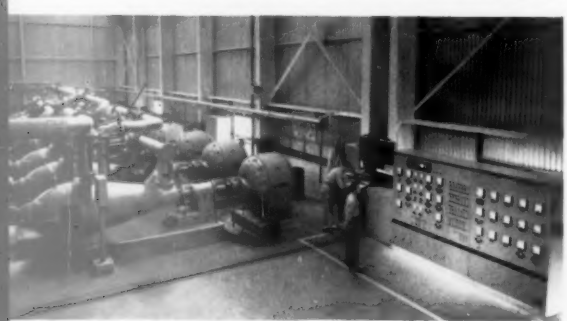
Foxboro Additive Make-up Control Panel automatically controls the flow of sulphur dioxide, sodium chlorate, and sulphuric acid for conversion to chlorine dioxide. The chemical plant was designed by Olin-Mathieson.



Foxboro instrumentation sets new

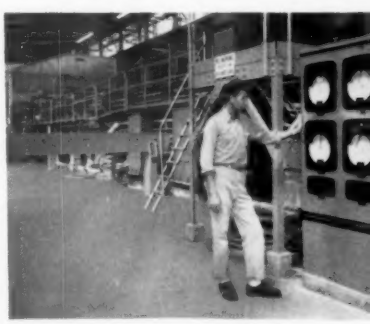


STOCK PREPARATION . . .

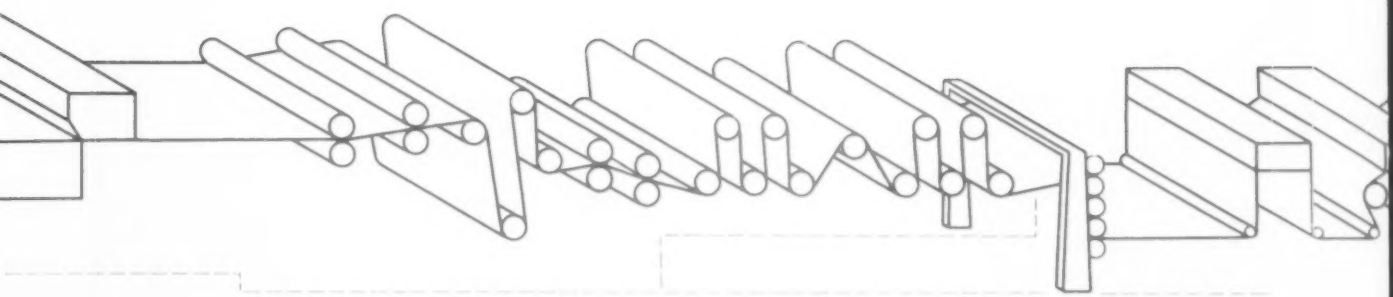


Foxboro Stock Blending Control System continuously and automatically blends pine, hardwood, and broke. At the same time the system adds dyes and additives in proportions desired. System holds all proportions exactly constant when demand rate changes.

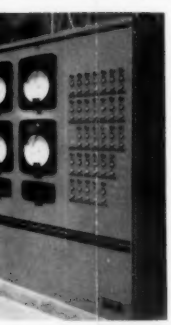
PAPER MACH



w standards in operating convenience for Continental

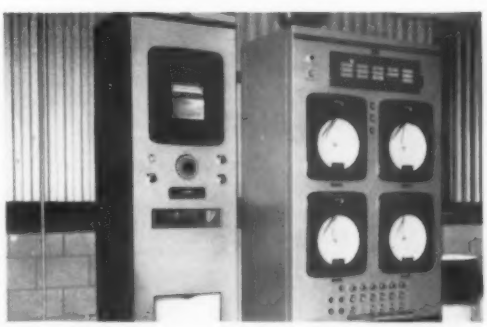


CHINE (wet end) . . .

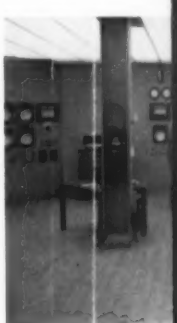


Foxboro Machine Tender's Panel for the 600-foot long Beloit machine continuously records primary and secondary head box levels along with couch pit and seal pit levels. A complete push button system is integrated with the panel.

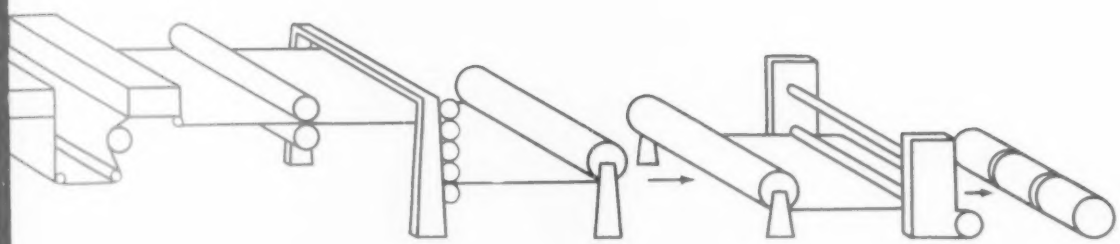
PAPER MACHINE (dry end) . . .



Foxboro Dry End Control Panel for automatic broke pulping, includes pneumatic machine speed recorder, receiving signal from Foxboro Speed Transmitter. Sheet Weight Profiler at left measures and records basis weight variations.



Can's giant new Georgia mill



POWER PLANT . . .

Foxboro Recorders continuously log steam flows, temperatures, and pressures for main steam plant which can produce 400,000 pounds of steam per hour. Panel at far left contains recorders and conductivity alarms for black liquor recovery control system.

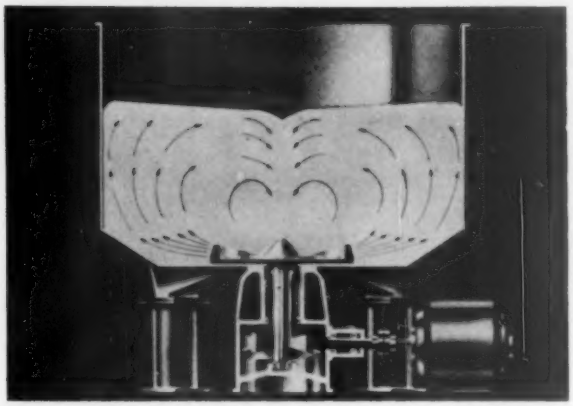
When you're interested in precise, integrated measurement and control — look to Foxboro. Ask your local Foxboro Field Engineer for the complete story. The Foxboro Company, 9910 Neponset Avenue, Foxboro, Massachusetts. **Reg. U.S. Pat. Off.*

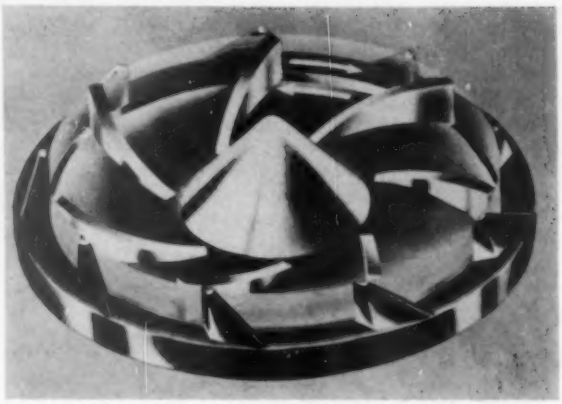
FOXBORO

REG. U. S. PAT. OFF.

NEW EQUIPMENT . . .

New pulper offers fast defibering





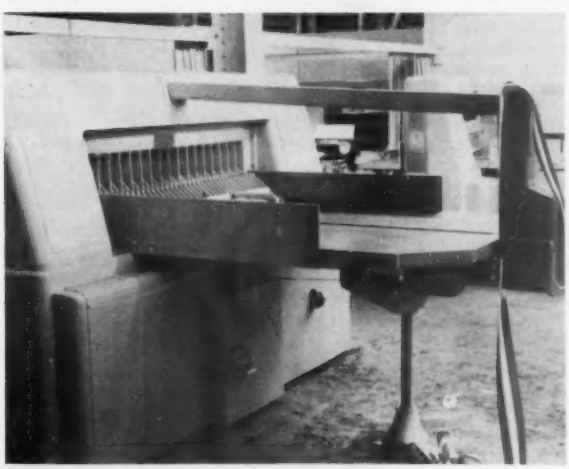
Applications: For pulp defibering.
Features: The Dualator is said to defiber pulp twice as fast with half the energy consumption normally required.

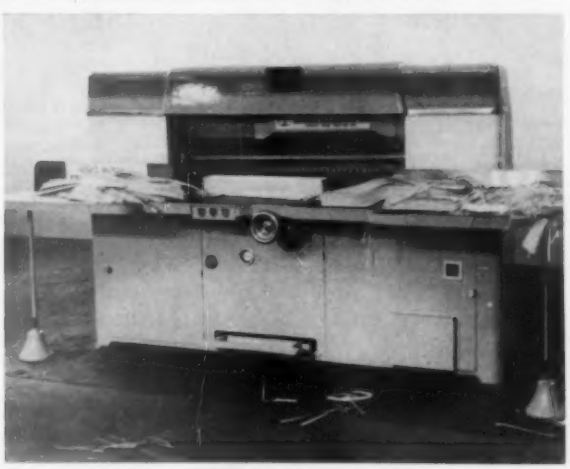
Said to be based on a new concept, the Dualator's design incorporates two, contra-rotating, coaxially-mounted rotors. Both are driven by a single motor operating through a specially designed right angle drive unit beneath the cylindrically shaped tub. Streams of stock from the inner rotor, moving counter-clockwise, pass directly into the path of the vanes of the outer rotor, moving clockwise. This abrupt reversal in direction at the interfacial speed of 6,000 fpm produces tremendous hydraulic shear forces. Stock is literally ripped to shreds as it moves repeatedly across the narrow gap between the rotors.

The flow pattern created by the interaction of the two rotors and the cylindrical shape of the tub is different. Stock flows radially outward from the rotors to the side of the tub, then upward along the side of the wall, radially back to the center and down again to the rotors. This circulation is not turbulent; on the contrary says the maker, it was designed to be relatively slow and positively controlled. This circulation pattern makes possible the energy efficiency achieved, since energy that would otherwise be dissipated in unnecessary circulation is effectively converted into useful defibering.

The unit was field-proven for a year in the Gilman, Vt. mill of the Gilman Paper Co. David Peat, mill manager says, "We needed something to do a good job on hard-sized and wet strength papers requiring a minimum of chemicals and heat. The Dualator does the best job of any piece of equipment we are aware of."

New trimmer has 50 strokes/minute speed





GALT, ONT.—A new line of mill size paper trimmers with knife speed of 50 strokes a minute is planned for first-of-the-year production by The Lawson Co., division of Miehle-Goss-Dexter.

Pilot models of 85", 100" and larger sizes will be completed by December, according to E. M. Abrams, Lawson president and sales manager. Production of these sizes for world-wide distribution will begin early next year, he said.

Production of 42", 47", 52" and 56" trimmers will begin soon at The R. McDougall Co., Lawson's affiliate in Galt, Ontario. The Canadian company is a division of Upton, Bradeen and

James Ltd., and was a manufacturer of heavy specialty machinery for the last several years.

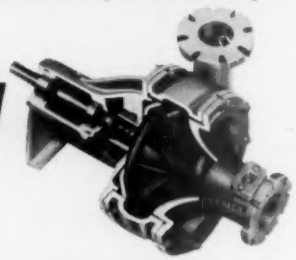
The "Pacemaker II" trimmers succeed Lawson's 1957 "Pacemaker" design, still being produced in Chicago. The company says the 50-stroke-a-minute knife speed on the new models is nearly 20% faster than other machines. The blade is pressure-stimulated and drops only after a 4"-wide hydraulic box clamp builds up pre-set weight. A feature carried over from previous models is an optically magnified scale which gives back gauge settings in 64ths and is projected forward onto a screen in an eye-level beam.

Other design features include synchronized dual-drive knife action which eliminates need for excess linkage, knife pull directly in line with shear slot, conical gearing, arched stainless steel band which automatically closes slot in which back gauge travels, front controls, optional automatic spacing and fully enclosed moving parts, many of which are supplied from the U.S.

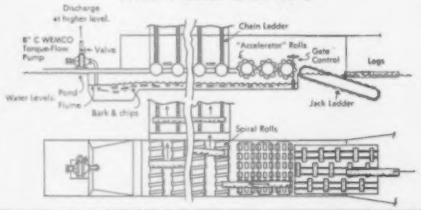
Lawson officials said the move to Canada will allow the company to compete more successfully with U.S. and all international competition. The machines will be distributed abroad by Lawson's representatives.

WEMCO® The INCREDIBLE Torque-flow Pump!

the pump they couldn't clog

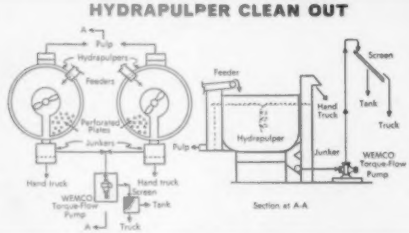


MILL POND CLEAN-UP



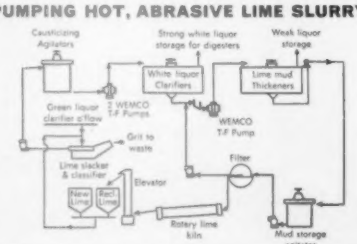
In a large Canadian paper mill a Torque-Flow Pump is used to keep mill pond and power generation intakes free of bark slabs and chips torn from logs by haul-up equipment. Although debris is skimmed from surface of pond, the pump has operated continuously for an entire season without air binding or clogging.

HYDRAPULPER CLEAN OUT



An increasing number of reclaimed paper installations now use Torque-Flow Pumps for hydrapulper clean out. Because of exclusive non-clog liquid impeller action, a Wemco Torque-Flow can pump wire, rags, rope, glass and other debris directly from the junker onto a trash screen. If done manually, clean out would require several man hours of labor.

PUMPING HOT, ABRASIVE LIME SLURRY



In a northwestern paper mill, Wemco Torque-Flow Pumps are used to feed a hot, abrasive lime slurry from the causticizing agitators to the clarifiers. Plant records on a pump installed in 1958 show a maintenance expense of only $20.00 in over three years' operation! A Wemco Torque-Flow Pump is also used to pump the lime mud, which runs as high as 40% solids, from the clarifier to the thickener.

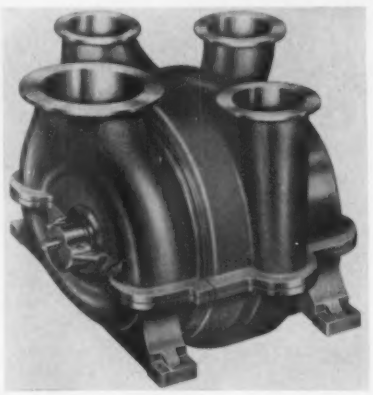
Only Wemco's Torque-Flow Pump with continuous, open passage, liquid impeller could have done it!

Write for more detailed information on Torque-Flow applications today.

WEMCO® *a division of* Western Machinery Company
650 Fifth Street, San Francisco 7, California

Centrifugal exhauster

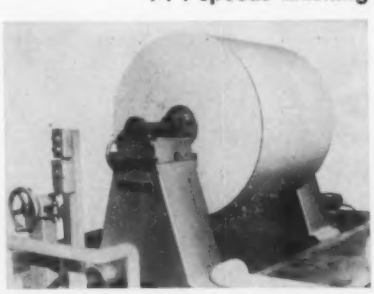
. . . has four stages



Applications: For all vacuum requirements of the paper machine.
Advantages: The unit will provide 20" mercury vacuum with interstage connections for 10" and 15" requirements, plus line, valve and separator losses between paper machine and exhauster. Compression-heated exhaust air can be used for drying. Reduced hp needs are assured by water spray cooling and primary and secondary moisture separators in suction lines. A fifth stage can be added for vacuum levels below 20". Capacity ratings are from 10,000 to 50,000 CFM.
Supplier: **Dresser Industries Inc., Roots-Connersville Blower Div., 900 West Mount St., Connersville, Ind.**

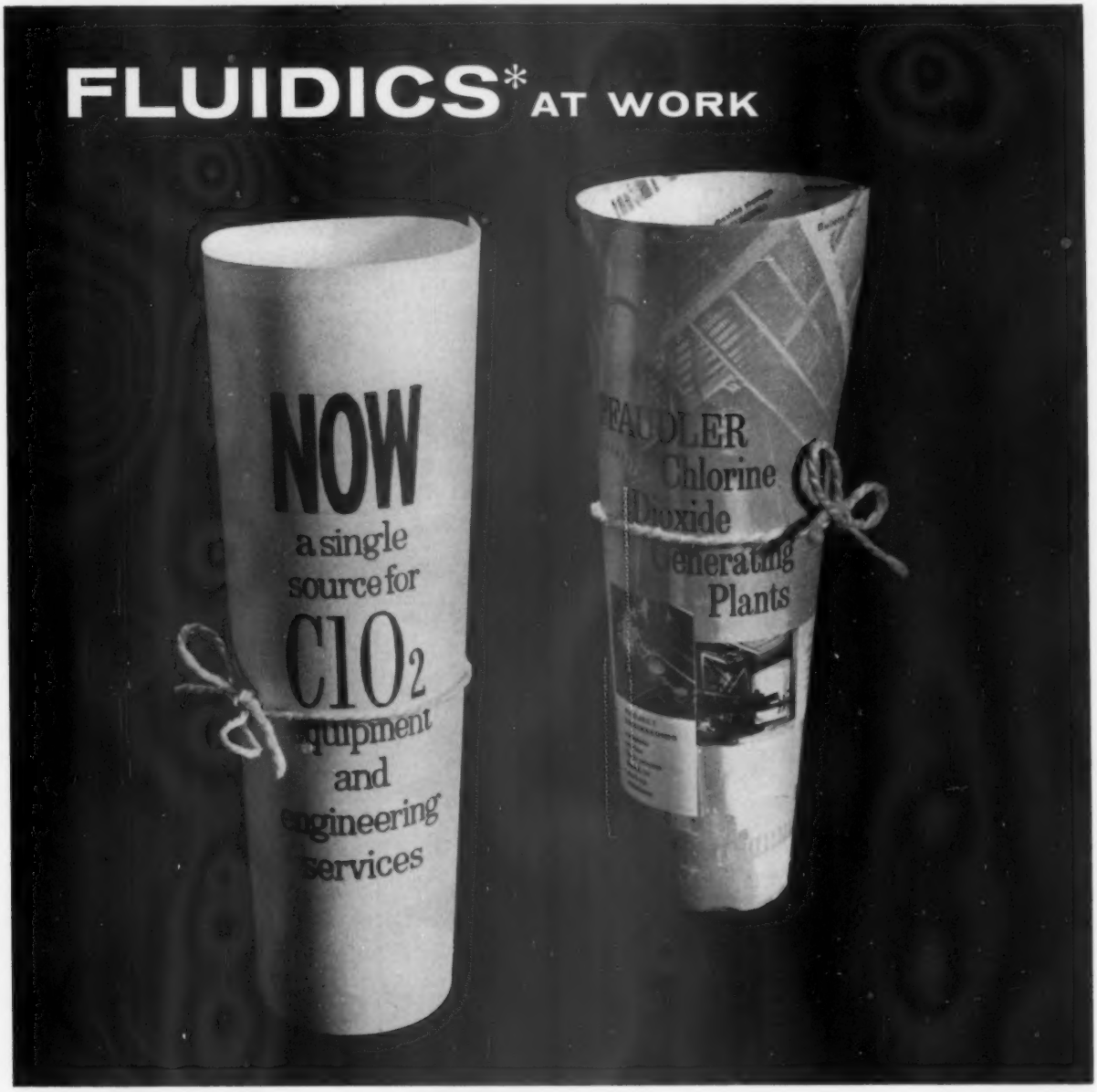
Shaftless backstand

. . . speeds finishing



Application: For finishing and convertin operations.
Features: Elimination of through shaft allows unit to be loaded without over-

FLUIDICS* AT WORK



If you're planning to build or expand facilities for generating chlorine dioxide, you'll want a copy of this new booklet from Pfaudler.

In it you'll find a detailed analysis of why Pfaudler® Glasteel—glass inside for *corrosion resistance*, steel outside for *strength*—has become the preferred material for complete ClO_2 systems. You'll see a typical flow chart showing how Glasteel is used for generators, storage tanks, columns, pipe, pumps and accessories.

And you'll get a full description of what our Project Engineering service can do for you. This is a group of specialists who function as a temporary addition to your staff or your consultants. They can help with design, equipment selection, layout, procurement, erection and start-up.

Your copy of Bulletin 1011, "Pfaudler Chlorine Dioxide Generating Plants," will be in the mail immediately upon receipt of your request. Write to: Pfaudler Division, Dept. PP-101, Rochester 3, N. Y. In Canada, contact Pfaudler Permutit Canada Ltd., Toronto.

*FLUIDICS is the Pfaudler Permutit program that integrates knowledge, equipment and experience in solving problems involving fluids.

PFAUDLER PERMUTIT INC.

Specialists in FLUIDICS . . . the science of fluid processes

head cranes, lift trucks or other material handling equipment. Usually one man can easily handle the largest roll, rolling it into position between two end stands. A hydraulic lift built in at floor level raises roll to proper height. Two motorized side frames are then run in allowing the pneumatic chucks to engage the core.

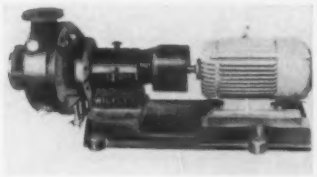
Specifications: Backstand units have both cross and endwise adjustment for web alignment. Paper tension can be controlled by pneumatic braking system which also serves to completely stop the roll in the event of a paper break or shutdown of other equipment.

Available singly or in matched sets, these units provide highly flexible operation for winding, cutting, slitting, laminating and treating.

Supplier: **Moore & White Co., 330 E. Hunting Part Ave., Philadelphia 24, Pa.**

Play It Smart!
Use Bitusize® "B" emulsified asphalt integral sizing to get high dry and wet strength in all your hard sized grades of board. Contact our office nearest you for complete information.
American Bitumuls & Asphalt Company
320 Market St., San Francisco 20, Calif.
Perth Amboy, N. J. Baltimore 2, Md.
Cincinnati 38, Ohio St. Louis 17, Mo. Oakland 1, Calif.
Atlanta 8, Ga. Tucson, Ariz. Inglewood, Calif.
Mobile, Ala. Portland 8, Ore. San Juan 23, P. R.
Bitumuls® Emulsified Asphalts • Chevron® Paving Asphalts
Laykold® Asphalt Specialties
SOAP CHIPS
V3c
DYNAMITE
Cola
V3s
BEER

Acid pump
. . . is steam jacketed



Applications: For any solution which freezes above ambient temperatures.

Advantages: Multiple steam line connections, provided on the case, case plate and stationary steel housing, are connected to incoming and return steam lines. Connections are tapped for 3/4" pipe.

Supplier: **A. R. Wilfley and Sons, Inc., Denver, Colo.**

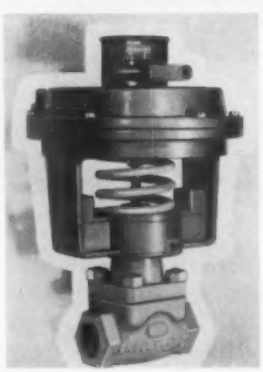
Chipper knives
. . . of alloy steel

Applications: for pulp and paper chippers.

Features: Available in 9 to 36 in. lengths and custom widths and thicknesses. The manufacturer says these knives of alloy steel are high-quality and heat-treated for maximum impact with minimum embrittlement and spalling.

Supplier: United Shoe Machinery Corp., Machine Knife Div., 140 Federal St., Boston 7, Mass.

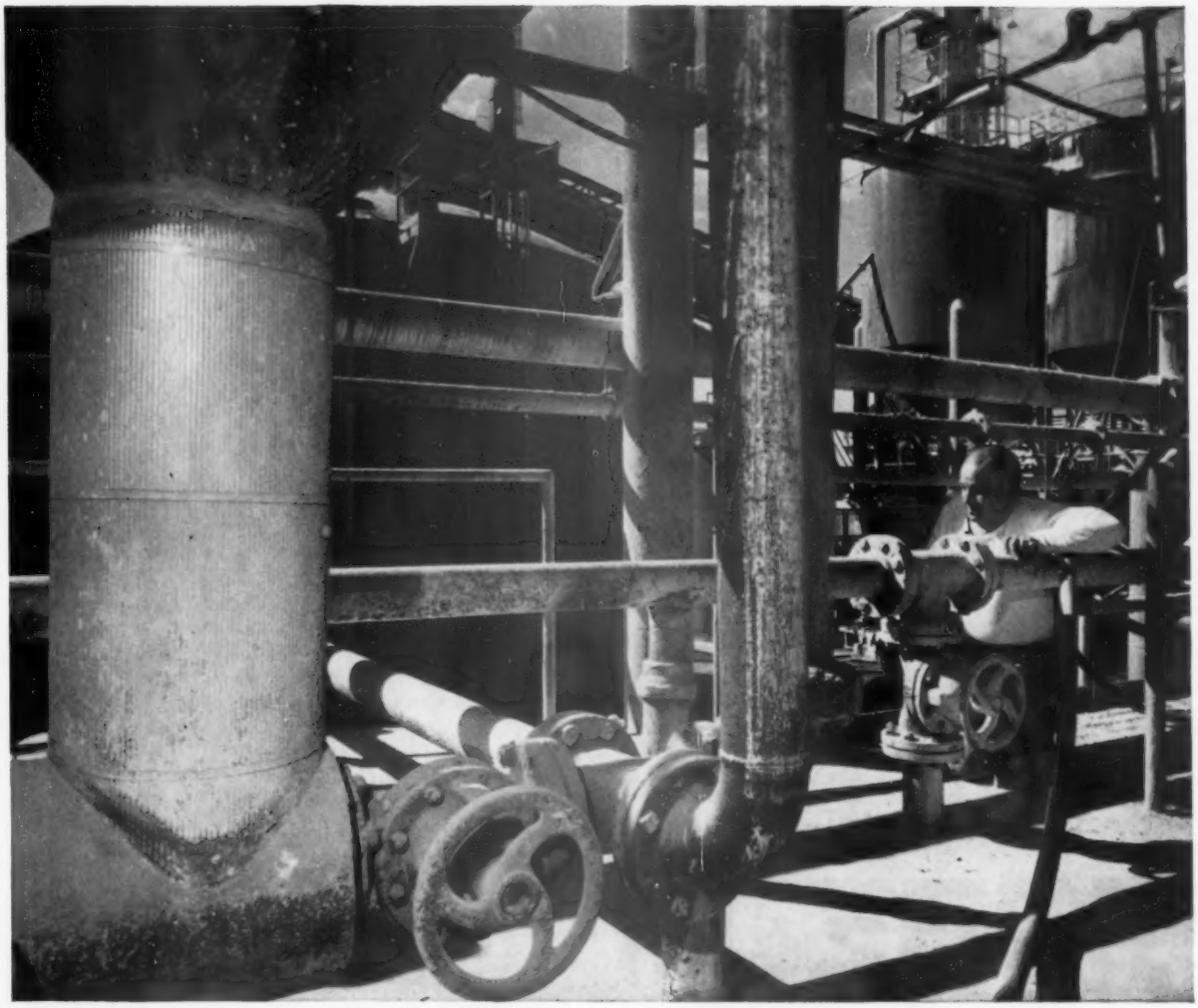
Lightweight valves
. . . for small volume flow



Applications: For regulating flow of small streams of air, water, etc.

Advantages: Included in this new line is a diaphragm-actuated model, an ultra-low-flow model and two models with electric actuators. The latter use low or line voltage and offer two-position floating or proportional control and stroking speeds as low as 7.5 seconds. Valves come in three body sizes, 1/2", 3/4" and 1".

Supplier: **Minneapolis-Honeywell Regulator Co., Fort Washington, Pa.**



Bowaters Southern Paper Corporation, Calhoun, Tennessee

SARAN LINED PIPE carries highly reactive chemicals for six years, with only minor repairs!

Here, Saran Lined Pipe carries thousands of gallons a day of extremely corrosive paper-making chemicals . . . calcium hypochlorite solution, wet chlorine gas, acids . . . at pressures up to 150 psig. Nearly a mile of Saran Lined Pipe has served Bowaters Southern Paper Corporation since 1954, with only minor repairs needed.

Bowaters reports that Saran Lined Pipe has greatly reduced piping problems in transporting highly reactive pulping chemicals over long distances, under high pressures. For example, the Saran Lined Pipe that carries scale-forming materials, such as calcium hypochlorite, can be acid-cleaned when necessary—an operation not always possible with other kinds of pipe.

Because this pipe's tough steel casing is strong and self-supporting, long pipe runs require only normal support. And plant crews estimate they can cut, thread and fit Saran Lined Pipe in less time than required for other types of corrosion-resistant piping.

Wherever operations require strong, corrosion-resistant piping—no matter how corrosive the cargo may be—consider Saran Lined Pipe. Saran Lined Pipe, fittings, valves, and pumps are available for systems operating from vacuum to 300 psi, from below zero to 200° F. They can be cut, fitted and modified easily in the field without special equipment. For more information, write Saran Lined Pipe Company, 2415 Burdette Avenue, Ferndale, Mich., Dept. 1570JJ10-2.

THE DOW CHEMICAL COMPANY DOW Midland, Michigan

Continued from page 27

TAPPI corrugated conference draws 300

John McEwen, Weyerhaeuser Co., (left) Everett, Wash., presents scrolls of appreciation to Ron Wilmer, American Box Board Co., Grand Rapids, Mich., outgoing chairman of the corrugated containers raw materials committee; and A. Richardson, Gaylord Container Corp. Div., Crown Zellerbach Corp., St. Louis, Mo., outgoing chairman of the corrugated containers engineering committee.

R. W. Buttery, (left) Bathurst Containers, Ltd., Montreal, Que., vice-chairman, Corrugated Containers Div., TAPPI; K. R. Martin, Olin Mathieson Chemical Corp., West Monroe, La., secretary; and J. J. Koenig, Gaylord Container Div., Crown Zellerbach Corp., chairman. Mr. Koenig was also co-chairman of the conference.

SAN FRANCISCO—The growth of corrugated containers has been so rapid and interest is so high in this subject that more than 300 TAPPI members attended the eleventh such TAPPI conference here in the City by the Golden Gate.

Joint chairmen were H. W. Wilson, Royal Container Div., Georgia Pa-

ROGERS

MODEL 300 EXTRA HEAVY DUTY KNIFE GRINDER

with HYDRAULIC DRIVE

SIZES: 78" to 240" CAPACITY.

Other Standard Equipment includes Heavy Duty Precision Ball Bearing Spindle, 26" Segmental Grinding Wheel, 25 HP TEFC Motor, Automatic Force Feed Oiler, 8" x 8" Swiveling Knife Bar, Wet Grinding and Precision Wheel Dresser. Write for complete information. Other Models available.

SINCE 1887

SAMUEL C. ROGERS & CO., INC.

2070 SHERIDAN DRIVE • BUFFALO 23, NEW YORK

C. LESTER HORN
BUSINESS CONSULTANT
120 BROADWAY
NEW YORK 5, N. Y.

TELEPHONE
REctor 2-2728

October 2, 1961.

Mr. Executive, Director or Owner of any
COMPANY in the PAPER or ALLIED INDUSTRIES
in The UNITED STATES or CANADA.

Dear Sir:

Would you like to receive, with my compliments, a copy of a 22-column tabulation of data covering about 140 companies in the PAPER and ALLIED INDUSTRIES? It will be published the end of November. It will contain:

Latest available interim report data on Sales, Earnings, Ratios of Profits on Sales, % of Increase or Decrease in relation to comparable previous year periods. Earnings per share and Stock Market Quotations (hi, low and last) for 1960 and for 1961 to October 31st.

In addition to the foregoing data, the FALL SUPPLEMENT to the 95-column STATISTICAL COMPARISON of COMPANIES in the PAPER and ALLIED INDUSTRIES in The UNITED STATES and CANADA will contain a number of grephic charts showing "How the PAPER INDUSTRY has fared Stock-marketwise as compared with other leading industries" over the past ten years.

A copy of this FALL SUPPLEMENT to the 1961 STATISTICAL COMPARISON will be sent to you, gratis, at the same time they are mailed to subscribers for the '61 S.C. if your request for same on your business letterhead is received prior to printing deadline.

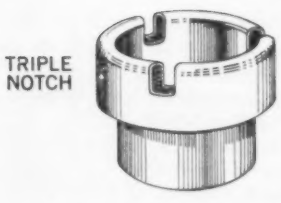
Sincerely yours,

C. LESTER HORN

SPECIALIZING IN PURCHASES, SALES AND MERGERS OF COMPANIES IN PAPER AND ALLIED INDUSTRIES IN THE UNITED STATES AND CANADA

GET more FOR YOUR core DOLLAR....

...from the world's largest manufacturer of paper tubes and cores!



SONOCO METAL ENDS

All notched Sonoco Metal Ends are constructed with steel lugs securely welded in place. Notches are standard 11/16" x 11/16". Ends may be purchased attached to cores, or separately in bulk. Sizes and weights available upon request.

Sonoco combines research, 60 years' experience and completely integrated manufacturing facilities to produce the type paper mill core you want and need. As a result, Sonoco meets the industry demand for cores which possess *extraordinarly* high torque and crush strength to withstand repeated abrupt starts and stops in winding operations and on modern printing presses. Long-lasting Sonoco cores deliver uniform, trouble-free performance that saves money in use.

Sonoco paper mill cores are available in two grades . . . premium-grade Durolene and economical Duro. Both can be supplied with metal ends in standard sizes or without metal ends in all diameters. Sonoco also furnishes a complete line of metal end core machinery and core cutters.

Regardless of your core needs, you'll get more for your core dollar from SONOCO in service, quality and economy. Call or write today!

SONOCO
Paper Mill Cores

SONOCO PRODUCTS COMPANY, HARTSVILLE, SOUTH CAROLINA
Mystic, Conn. • Akron, Ind. • Ravenna, Ohio • Lowell, Mass.
Holyoke, Mass. • Phillipsburg, N.J. • Longview, Texas • Philadelphia, Pa.
La Puente, Calif. • Fremont, Calif. • Atlanta, Ga. • Richmond, Va.
MEXICO: Mexico, D.F. • **CANADA:** Brantford, Ont. • Granby, Quebec

MAIL THIS TODAY

SONOCO PRODUCTS COMPANY
HARTSVILLE, SOUTH CAROLINA

Please send me the free descriptive brochure on Sonoco Paper Mill Cores.

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

3126

STRICTLY PERSONAL . . .

cific Paper Co., San Francisco, and O. P. Wanamaker, Fibreboard Paper Products Corp, Antioch, Calif. Mr. Wanamaker was also technical program chairman, and he was assisted by R. W. Catzen, Baltimore Paper Box Co., Baltimore; G. M. Caploe, Longview Fibre Co., Oakland; and A. Richardson, Gaylord Container Div., Crown Zellerbach Corp., St. Louis.

Those assisting from TAPPI, New York, were A. J. Winchester, technical secretary; and H. O. Teeple, technical associate. Publicity chairman was H. T. Scordas, Union Bag-Camp Paper Corp., New York, and local arrangements chairman, R. Wright, Phila. Quartz Co., Berkeley.

At the annual luncheon John McEwen, Weyerhaeuser Co., Everett, Wash., and executive committee member, TAPPI, presented scrolls of appreciation to A. Richardson, Gaylord Container Div., Crown Zellerbach Corp., St. Louis, outgoing chairman of the Corrugated Containers Engineering Committee, and to Ron Wilmer, American Box Board Co., Grand Rapids, Mich., outgoing chairman of the Corrugated Containers Raw Materials Committee. Their places have been taken respectively by J. E. Knecht, Bathurst Power & Paper Co., Whitby, Ont., and A. L. Magnuson, Potlatch Forests, Inc., Lewiston, Idaho.

On the final day of the conference plant tours were made to Longview Fibre Co., Oakland, and Royal Container Div., Georgia Pacific Paper Co., Millbrae. ■

Plus features of the Slide Washer

Practically maintenance free operation!

Power economy plus!

Low, low "first cost"!

Whether as a washer, a saveall, or thickener, the Kalamazoo "Side Hill" Washer will give you a better and more effective wash job than any other method available today.

These units are especially designed for each installation and fabricated of top quality materials. Installation supervision furnished upon request. Laboratory units available for experimental purposes in determining proper angles and screen mesh.

***FREE** cost estimates and names of other installations upon request.*

WOOD TANK DIVISION

Kalamazoo TANK & SILO CO. 501 Harrison St. Kalamazoo, Mich.

East

William S. Bunte has joined Frank W. Egan & Co. as sales engineer in extrusion coating. He was former manager of Riegel Paper Corp.'s Paterson, N.J. plant.

Bruce Otis, assistant to the president, the Black-Clawson Co., now is also responsible for administration of the company's international operations through New York offices.

Robert T. Birch, formerly with West Virginia Pulp and Paper Co., is now quality control engineer, Peter J. Schweitzer Div., Kimberly-Clark Corp. . . . **Ray H. Cross** has left St. Regis Paper Co. to join Improved Machinery . . . **Howard B. Church,** formerly of A. M. Byers & Co., is now a sales engineer for Water Service Laboratories, Inc. . . . **Louis P. Cartsunis,** Becco Chemical Div. of FMC has moved from the Buffalo, N.Y. labs to the Princeton, N.J. central research lab. . . .

Edgar R. Comee is now resident vice president and general manager of the Pejepscot Paper Co., Brunswick, Maine . . . **Robert J. Van Nostrand,** previously with Brown Co., is now president of the Merrimac Paper Co., Inc., Lawrence, Mass. . . . **Herman W. Verseput** has left Robert Gair Co. and is now manager of folding carton development for Riegel Paper Corp., Milford, N.J. . . .

Clyde A. Benson, formerly with The Mead Corp., is now a consultant for papermaking and converting at 2 Herrick Drive, Old Tappan, N.J. . . . **George T. Cartier** has left A. M. Collins Mfg. Co.

Div. of International Paper Co. to be a consulting chemist in web processing in Wayne, Pa. . . .

Walter C. Bloomquist, General Electric Co., has been transferred from Philadelphia, Pa., to Schenectady, N.Y. as manager of industrial power operation. . . .

Joseph J. Fiori has joined Columbia Box Board Mills Inc. as assistant to the president. He had been manager of mills for Hinde and Dauch, Toronto, Canada and before that was with Gibraltar Paper Box, Shartle Brothers Div. of The Black Clawson Co. and Stone Container Corp. . . . **Ralph Skaar** has joined Spencer Chemical Co. as eastern sales mgr., for industrial chemicals division. He will be located in New York. . . .

Harold W. Boyd has been named to eastern regional sales, Oxford Paper Co., New York City. He was regional sales mgr., Gulf States Paper Corp. . . . **P. Park White,** formerly Southern district dyes and intermediates salesman, Du Pont, has been transferred to the company's technical laboratory, Deepwater Point, N.J.

Charles E. Payne Jr., central engineering, St. Regis Paper Co., Deferiet, has been appointed acting engineer at the mill. He succeeds **George Cupernall** who resigned to join Fitchburg Paper Co.

New posts at St. Croix are: **Robert E. Noble Jr.,** controller, the paper, pulpwood and Canadian pulpwood companies; **William A. Felske Jr.,** asst. treasurer, and controller, the paper company; **Allegra L. Brown,** asst. treasurer and controller, the pulpwood companies; **Donald E. Stelle,** asst. treasurer and office services mgr., the paper company; **John F. Marquis,** inventory control section supervisor.

Bruce A. Kirchhoff has been named Pittsburgh district sales engineer, industrial process and filter equipment, Eimco Corp., Salt Lake City, Utah.

Midwest

John Shethar, Midwestern mgr., pulp and paperboard division, Weyerhaeuser Co., Chicago, has two sales assistants, **Philip L. Carter Jr.** and **Matthew Davison.** Mr. Carter, originally from Philadelphia, was graduated from Tufts College with a b.s. in chemistry. He was a naval officer and worked at Everett sulfite mill as a project chemist. Mr. Davison, originally from Flint, Mich., was graduated from Dennison University with a b.a. in economics. He was an Army n.c.o. and worked in the Everett kraft mill technical dept. and participated in the company's training program.

Bought first AMERICAN in 1955 ...another in '58...another in '60

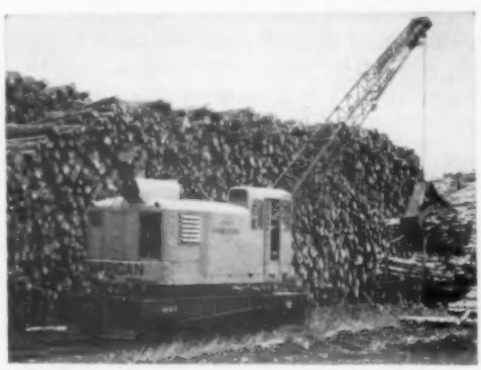
That, in a few words, tells the acceptance AMERICAN cranes have earned at this major Wisconsin mill.

The 700 Series crawler (above) decks truck-hauled pulpwood in ranks 35 feet high . . . unloads railroad gondolas . . . transfers seasoned pulpwood from ranks to railroad flats for transport to the mill.

The 830 locomotive crane (below) assists the crawler crane on pulpwood handling . . . also pinch-hits on various utility assignments including car switching and erecting work. Together, the two machines handle about 120,000 cords annually.

Newest of the three AMERICANS — a pedestal-mounted 200 Series crane — was put into service just last year. Purpose of the pedestal-mount is to achieve high efficiency on "localized" job of transferring pulpwood from rail flats to hot pond. "A nice smooth unit," says the Asst. Plant Engineer.

It's another example how mills everywhere are showing their satisfaction with AMERICAN cranes thru *repeat purchases.* Remember, your AMERICAN representative can give you unbiased recommendations on crawler, rubber-mounted, locomotive, or special-purpose cranes for low-cost pulpwood handling. Call him in for a talk about your specific requirements. CC-738



AMERICAN

AMERICAN HOIST and DERRICK COMPANY
ST. PAUL 7, MINNESOTA

STRICTLY PERSONAL . . .

The board of trustees was elected at 32nd annual meeting of the Institute of Paper Chemistry, Sept. 12, in Appleton, Wis. Senior trustees are **D. K. Brown,** founding trustee, Neenah, Wis.; **George Olmsted Jr.,** president, S. D. Warren Co., Boston, Mass.; **Ernest Mahler,** Neenah, Wis., founding trustee and honorary chairman of the board; and **R. C. Doane,** chairman, International Paper Co., New York, N. Y.

Elected as term trustees were **Maxwell D. Bardeen,** president, Simpson Lee Paper Co., Vicksburg, Mich.; **Robert Faegre,** president, Minnesota and Ontario Paper Co., Minneapolis, Minn.; and **Howard Morgan,** vice president, Weyerhaeuser Co., Tacoma, Wash.

Elected as nominee of Lawrence College, Appleton, Wis., for ex-officio trustee was **Karl Stansbury,** former chairman of the board of Thilmany Pulp and Paper Co., Kaukauna, Wis.

Harold Nelson has been named manager, enamel paper scheduling, Consolidated Water Power & Paper Co. . . . **Richard Hahn** is now pipe fitter foreman succeeding the late **Donald Dittburner** at Wisconsin Rapids; **Charles W. Panter, Jr.,** succeeds Mr. Hahn as asst. foreman and **Glenn R. Prusynski** becomes asst. control and analysis foreman succeeding **Ben Erickson** who has joined Consolidated's sales-service dept. . . .

Somers

Welliver

William H. Somers has been appointed midwest regional sales representative, paper sales, Minerals & Chemicals Philipp Corp. **W. E. Welliver** has been reassigned as western regional sales representative for the company's paper sales. Mr. Welliver will represent MCP in Wisconsin, Minnesota and on the West Coast. Mr. Somers, a pulp and paper manufacture graduate of Western Michigan University formerly was associated with the coatings technical service department, Dow Chemical Co., Midland, Mich. . . .

Art Sarver, 50-year papermaking veteran at Nekoosa - Edwards Paper Co., retires as staff supt. at Nekoosa, Wis. paper mill. He had been supt. of that mill since 1947.

Robert J. Kelly has been promoted to industrial relations mgr., The Mead Corp., containers division. For the past five years he was labor relations representative for Mead at Chillicothe.

John N. Murray is now Minneapolis district sales mgr., U.S. Industrial Chemicals Co., replacing **William J. Brett,** who has retired. Mr. Brett will continue to represent U.S.I. in sales of sodium peroxide to the paper industry. . . .

A. Dean Hufford has been appointed production mgr., Kansas City, Kan. plant, Hinde & Dauch division, West Virginia Pulp and Paper Co. He had been asst. supt. of the company's Williamsburg, Pa. paper mill . . . **Richard J. Gunderman** has joined the research and development

SPECIFIED by leading mills

throughout the nation . . .

GILBERT and NASH

MODEL 430-A

Air • Guide

NEW . . . by GILBERT and NASH for upright, inverted or vertical operation. Compact, the 430-A permits complete standardization of all guides on the paper machine. Fits in any space where mechanical guides are now used — over-all height is 9". No springs, and air is used for power in both directions. Should mill air supply fail, the 430-A centers at point of last correction, thereby protecting against costly wire losses.

Sold exclusively by —

APPLETON MACHINE COMPANY

APPLETON • WISCONSIN

division, Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis. Mr. Gunderman was graduated in June from the New York State College of Forestry.

Canada

Archie C. McGougan has been appointed gen. mgr., pulp and paper sales, Bloedel and Powell River Ltd. Mr. McGougan, a former sales executive with the company, returns after two years with Abitibi Sales Co.

Harold E. (Hal) Cunningham has been appointed mgr. pulp and paper machinery products, Montreal Locomotive Works, Ltd. He is a former vice pres. and mgr., paper div., Dominion Engineering Co. For the past three years he has been a consultant with Montreal Locomotive.

J. R. Nicholson and **Ian Mahood**, of the Council of Forest Industries of B.C., **T. G. Wright**, chief forester of Canadian Forest Products; **C. D. Schultz**, consulting forester, and B.C. Chief Forester, **F. S. McKinnon** will represent B.C. at the "Resources For Tomorrow" conference in Montreal late in October. Their purpose: To outline the country's forest potential and economic problems affecting forest industry.

Tom Kent, former newspaperman, has resigned as a vice pres., Chemcell, Ltd., Montreal, to become special consultant to the federal Liberal party in Canada.

Two eastern Canadian appointments have been made by Crown Zellerbach Canada. **Albert Desjardins** has been named mgr. for Quebec and Maritime regions, **George Pletch**, sales supervisor for the Toronto area.

Pacific

Herb Munson, staff electrical engr. of St. Regis Paper Co.'s. central engineering, who served for past 2 yrs. as asst. project engr. on the company's $30 million Tacoma, Wash. plant expansion, now headquarters at St. Regis' western regional office in Tacoma to provide electrical engineering services for all Pacific Northwest divisions . . .

Robert B. Kirkwood has joined the sales dept., Ederer Engineering Co., Seattle. He will be chiefly responsible for light overhead units and will assist in heavy industrials . . . **Professor Eric C. Mobbs**, director of the North Wales Forestry School and vice chancellor of University College of North Wales, G. B., has been named visiting professor of forestry, Oregon State University. He is the sixth international forestry authority to participate in a lecture and seminar program.

Joe V. Baughman, formerly Yakima shipping container plant mgr., Weyerhaeuser Co., has been promoted to resident mgr. at the plant . . . **Hy Bergis**, associated with Chain Belt Co., even prior to the time it set up Northwest offices 30 years ago, has retired as regional mgr., Portland, Ore.

South

Edward F. Kane has been appointed sales service mgr., Ecusta paper operations, Olin-Mathieson Corp., Pisgah Forest, N. C. He had been on the Middle Atlantic sales staff. **Richard D. Roberts**, formerly Ecusta records supervisor, now is systems and procedures supervisor. **Ansel R. Jones** has been named foreman, Ecusta refining dept.

Hermann Weiss, has left St. Regis Paper Co. to join West Virginia Pulp and Paper Co. as a development engineer at

NO Hard or Soft Spots at the Winder with . . .

RMF hydroscillators

This simple, compact oscillating unit provides a constant horizontal shifting motion while the sheet is being wound into a roll. This back and forth movement prevents wrinkles from "tracking" and building up throughout the roll. No more wrinkles, no more hard and soft spots!

Check your finishing room...our RMF Hydroscillators will give you a higher percentage of salable paper. For more information send for Bulletin No. 101.

RMF

ROSS MIDWEST FULTON / a division of Midland-Ross Corporation
3320 S. Dixie Highway, Dayton 39, Ohio
BOSTON • ATLANTA • NEW YORK • SEATTLE • MT. PROSPECT, ILL. • MOBILE

STRICTLY PERSONAL . . .

Covington, Va. . . . **Pauli O. Wendelin** of West Virginia's Covington mill has been transferred to Charleston, S.C. as a research chemist . . .

Robert N. Brownlee moves from Personal Products Corp. to be chemical engineer of St. Regis Paper Co., Dallas, Texas . . . **John P. Bosshardt** is now supt. of Mead Containers, Atlanta, Ga.

Boyd F. Vaughan has been selected dyes and intermediates salesman, Southern district, E. I. du Pont de Nemours & Co. He was Chicago district salesman. . . . **Louis J. DeChellis** has been appointed sales representative, Texas territory, pigments and color dept., The Glidden Co.'s chemicals group.

T. C. Bannister Jr., R. Bruce Reid and **George C. Davis** have been elected to the board of directors, Bowaters Engineering and Development Inc., Calhoun, Tenn. Mr. Bannister is vice president-gen. mgr, Bowaters Carolina Corp., Catawba, S. C. He was kraft supt., Bowaters Southern Paper Corp., Calhoun, before becoming mill mgr. at Bowaters Carolina in 1956. Mr. Reid is general purchasing agent, Bowaters Southern, Bowaters E & D, and Bowaters Carolina. Mr. Davis is E & D's chief engineer.

Pulpwood

Paul C. Kersavage has been appointed an instructor at the University of Minnesota School of Forestry. He had been conducting research at the University of California Forest Products Laboratory, Berkeley. **Egolfs Bakuzis,** assistant professor of forestry at the University will attend a conference of the International Union of Forestry Research, Sept. 9-22, Vienna, Austria.

Edwin J. Jankowski, chief forester, The Northwest Paper Co., Cloquet, Minn., has been elected president of the Lake States Council of Industrial Foresters. The council is for technical foresters in the pulp and paper, lumber and veneer industries.

Norman E. Bjorklund has been promoted to chief forester, Industrial Forestry Assn. He has been IFA district forester in the Columbia River area since 1948. **Keith Petrie,** formerly wood supply mgr., Kaiser Gypsum Co., and consulting forester, Tree Farm Management Service, Eugene, succeeds Bjorklund as district forester.

Suppliers

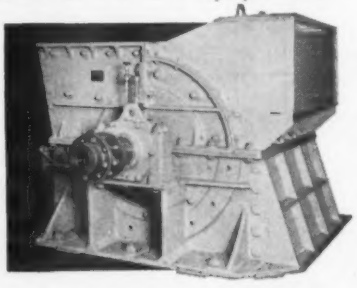
Douglas R. Nichols Jr., director of Nichols Engineering & Research Corp. and past vice president and treasurer, has been elected executive vice president of the company by its board of directors.

James R. Yeager now is assistant to the director of coatings materials sales, polymers dept., coatings division, Hercules Powder Co. He was nitrocellulose sales mgr. . . . **James J. Derham,** formerly project engineer, American Water Softener Co., and **Robert M. Wurtz,** formerly a sales engineer, Milton-Roy Co., have joined the engineering staff, Fischer & Porter Co.

Thomas F. Scannell has been appointed vice president-director of international operations, The Falk Corp., Milwaukee, Wis. He was vice president-gen. sales mgr. **Don K. Lambert** will be international sales director. **Sands G. Falk,** appointed Eastern division sales mgr., and **Kenneth O. Hood,** appointed Western division sales mgr., will take over duties formerly handled by the gen. sales mgr.

WILLIAMS-GRAY COMPANY
221 North LaSalle Street
Chicago 1, Illinois
WILLIAMS-GRAY COMPANY Serving the Paper Industry 1906
PAUL FOSTER
PETER TALBOT
HERB FISHBURN
WES GALLUP
BILL FRENCH
Lindsay Wires
Knox Woolen Felts
Mount Vernon Dryer Felts
Carrier Rope, Splicing Tissues, Deckle Webbing, Apron Cloth, Wire Brushes

Gruendler
POWERFUL Bark Hogs
operate up to 12 months without maintenance!
These magnificent machines produce easy-to-handle fuel for suspension or stoker burning. Many installations the world over, handling every type of bark as low as 2½ to 3 h.p. per ton.



Write for Catalog 900 showing complete line.
Gruendler
CRUSHER & PULVERIZER CO.
2915 North Market
St. Louis 6, Missouri

USED EQUIPMENT FOR SALE
IN STOCK—IN GOOD CONDITION

D-3 DEBARKER with side kick-out; includes 18' infeed conveyor without legs or drive.

D-3 DEBARKER, conventional model; includes 18' infeed conveyor without legs or drive.

DC-6 DEBARKER, 20', left hand controls, abrader head. Used 18 months.

DC-6 DEBARKER, 20", right hand controls, all 3 type heads. Used 2 years.

FULGHUM DEBARKER, 20', 3 pr. bull wheels. Used 18 months.

JACKSON DEBARKER, 24' long.

21" CAMBIO, 4 speed, TEFC motors, heavy duty gear sets. *Carries* NEW MACHINE WARRANTY.

44" METALMATIC in usable wood trough. Unit as good as new. Includes dye spray and horn.

Inquire for prices—Call, wire or write:

SODERHAMN
MACHINE MANUFACTURING COMPANY
Talladega, Ala. EMerson 2-9081

ENGINEERS

Immediate openings for qualified applicants familiar with chemical cleaning of process equipment or municipal/industrial water and waste treatment. Specific opportunities for:

SERVICE & SALES ENGINEERS

Degree in chemical or mechanical engineering. Prefer experience in steam generation; water, chemical and gas distribution; related processing equipment.

PRODUCT-SALES ENGINEERS

Degree required, preferably in engineering. Training or experience in chemistry, bio-chemistry or bacteriology acceptable. Background in waste treatment desirable.
Management recognition of initiative and ingenuity, unlimited opportunity for advancement. Group life insurance plus extensive major medical coverage. Unique retirement benefits.
Applicant must be willing to relocate and travel. Openings available nationwide. Individual preference for area assignments, if possible. Diversification of work assures full utilization of talent.

Mail resume to:

PERSONNEL MANAGER
DOW INDUSTRIAL SERVICE
DIVISION OF
THE DOW CHEMICAL CO.
20575 Center Ridge Road
Cleveland 16, Ohio

PROJECT ENGINEERS

We are seeking several graduate engineers with papermill experience to handle complete engineering of paper machine components. Compensation and position open, depending on experience and ability.

Southwestern Ohio location, medium-sized community, new office and factory, small to medium-sized company provide highly desirable working conditions. A young, growing company with a record of success in a world-wide business offers outstanding opportunity.

Send resume to:

Industrial Relations
The Manchester
Machine Company
P. O. Box 509
Middletown, Ohio

PAPER MEN

$5,000 to $50,000

SALES · PRODUCTION · TECHNICAL

Finding and landing **THE ONE BEST JOB** requires sound analysis, careful planning, proper contacts and skillful negotiation.

Paper men ourselves, and the only recognized professional specialists in the world in our particular field, we assist responsible paper men to accelerate their careers by uncovering and developing **THE SPECIFIC SITUATION** that most exactly fits the needs of each individual served.

If you seek to better yourself, and your performance to date entitles you to our endorsement, we can and will help you. Contact us in absolute confidence for information regarding procedure.

GEO. M. SUNDAY & ASSO.
PERSONNEL CONSULTANTS
TO THE
PULP, PAPER & ALLIED INDUSTRIES
6 E. Monroe Chicago ANdover 3-1970

Works Manager
FOLDING BOX MANUFACTURING PLANT
ROME, ITALY

Well known international paper company seeks manufacturing man with wide experience in printing and conversion of boards, paper, film, and foil, on high speed package-making machines. Modern 320,000 sq. ft. plant employing 600 people. Output to double in one to two years. Must speak Italian or have Italian background. Age not over 50. Salary $12,000 up. Excellent opportunity for advancement.

Box 1211
1501 B'way, N.Y. 36, N.Y.

WANTED

Used laboratory equipment for pulp evaluation by hand sheet methods. Interested in single items, as freeness tester, especially Canadian Standard; sheet mold, with or without white water return; proportioner; wet felt press; drum or plate drier. Reply Box 398, c/o PULP & PAPER, 370 Lexington Avenue, New York 17, New York.

MID-ATLANTIC REPRESENTATIVE

Leading Dryer Felt supplier requires aggressive man to call on paper mills in Mid-Atlantic area. Good pay, expenses and automobile furnished; also insurance and retirement. Apply giving age, education, experience, family status, references. Reply to Box P-374, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

Situation Wanted

CHEMICAL - INSTRUMENT ENGINEER: 18 years background in Kraft and Sulfite pulping, bleaching, papermaking and converting. Experience includes operation and maintenance supervision, process development, quality control and plant start-up. Desires to relocate. Presently employed. Resume upon request. Write to Box P-394, PULP & PAPER, 370 Lexington Avenue, New York 17, N.Y.

WANTED

Rotary Kilns & Dryers, all sizes, etc. We pay cash. Send us complete specifications on your idle equipment. PERRY EQUIPMENT CORP., 1403 N. 6th St., Phila. 22, Pa.

REVOLUTIONARY • PROVEN
PREFERRED
DRAPLEX Felts
NEEDLED
MADE ONLY BY
DRAPER BROTHERS COMPANY
CANTON, MASS.

RAY SMYTHE CO.
Pulp, Paper and Wood Mill
Machinery and Supplies
729 S. W. ALDER STREET, PORTLAND 5, ORE. CA. 3-0502

Production & Management Magazine of the Industry
Largest Paid Circulation in U.S.
Fastest Growing Magazine
in the Industry

PULP & PAPER's Directory of Consultants and Engineers

TIMBER ESTIMATORS --- FORESTERS
SERVING THE INDUSTRY FOR OVER 40 YEARS
C. D. SHY & CO.
COMMERCE TITLE BLDG. MEMPHIS 3, TENN.

PROFESSIONAL CARD ADVERTISING RATES.
$20 per issue on 13-time basis only
Special rate: $175 for 13 insertions,
$300 for 26 insertions
if paid in advance

S. J. BAISCH Associates
Consulting Engineers
104 East Second Street, Kaukauna, Wisconsin
PHONE ROckwell 6-3521
Specializing in: pulp—paper—converting—power —surveys & reports—corrosion—design

ELLIOT S. KOHN
Consulting Engineer
PULP AND PAPER MILLS
420 Lexington Ave., New York 17, N.Y.

PULP & PAPER MILLS
ENGINEERING-DESIGN • CONSTRUCTION • INSTALLATION • PLANT START-UP
Director, Pulp & Paper Division, W. T. Webster
THE H. K. FERGUSON COMPANY
A SUBSIDIARY OF MORRISON-KNUDSEN COMPANY, INC.
Main Office: Cleveland, Ohio
Other Offices:
New York • San Francisco • London • Paris • Sao Paulo

RUBENS AND PRATT
CONSULTING ENGINEERS
761 Olympic National Bldg. Seattle 4, Wash.
MU 2-1244
PULP AND PAPER MILL DESIGN

ALVIN H. JOHNSON & CO.
INCORPORATED
Pulp and Paper Mill
Consulting and Designing Engineers
Serving the Pulp & Paper Industries Since 1929
415 Lexington Ave. New York 17, N. Y.

H. A. SIMONS (INTERNATIONAL) LTD
CONSULTING ENGINEERS
PULP AND PAPER MILL DESIGN
CONSULTATION, REPORTS, PLANNING, DESIGN, ESTIMATING
SPECIFICATIONS, CONTRACTS, CONSTRUCTION ADMINISTRATION
Head Offices: 16 East Hastings Street, Vancouver B.C., Canada

CHAS. T. MAIN, INC.
ENGINEERS
Process Studies, Specifications and Construction Supervision
PULP AND PAPER MILLS
Steam Hydraulic and Electrical Engineering
Reports, Consultation and Valuations
Boston, Massachusetts Charlotte, North Carolina

Water and Waste Specialists
MALCOLM PIRNIE ENGINEERS
Consulting Civil and Sanitary Engineers
25 West 43rd St. New York 36, N.Y.
3013 Horatio Street Tampa 9, Florida

Advertisers' Index

Allis-Chalmers Mfg. Co.	37, 68-69	Jeffrey Mfg. Co.	57
American Bitumuls & Asphalt Co.	82	Kalamazoo Tank & Silo Co.	86
American Cyanamid Co.	52	Samuel M. Langston Co.	64-65
American Hoist & Derrick Co.	87	Minnesota Mining & Mfg. Co.	32
Appleton Machine Co.	88	Morden Machines Co.	26
Appleton Wire Works, Inc.	20	Nash Engineering Co.	38-39
Babcock & Wilcox Co.	22-23	Ohio Knife Co.	58
Barco Mfg. Co.	93	Pennsalt Chemicals Corp.	40
Bauer Bros. Co.	28-29	Perkins-Goodwin Co.	back cover
Beloit Eastern Corp.	33	Pfaudler Permutit Inc.	81
Bird Machine Co.	2	Pittsburgh Chemical Co.	10
Black-Clawson Co.	6	Puget Sound Pulp & Timber Co.	71
Chemipulp Process Inc.	93	Rader Pneumatics, Inc.	62
Classified Advertising	91	Rice Barton Corp.	1
Cleveland Crane & Engineering Co.	66	Riegel Paper Corp.	8
Clinton Corn Processing Co.	30	Samuel C. Rogers Co.	84
Corn Products Co.	53	Ross Midwest Fulton Corp.	89
De Zurik Corp.	36	Ray Smythe Co.	92
Dow Chemical Co.	16-17, 83	Soderhamn Machine Mfg. Co.	91
Draper Bros. Co.	92	Sonoco Products, Inc.	85
Dryden-East Hotel	93	Stauffer Chemical Co.	70
W. P. Evans & Son Ltd.	inside front cover	Swenson Evaporator Div.	31
Fisher Governor Co.	14	Tennessee Corp.	63
Foxboro Co.	73-78	Titanium Pigment Corp.	67
General Dyestuff Co.	24	Valley Iron Works	12-13
General Electric Co.	4	West End Chemical Co.	70
Gruendler Crusher & Pulverizer Co.	90	Western Machinery Co.	80
Haveg Industries Inc.	51	Westinghouse Electric Corp.	inside back cover
Heil Co.	34	Weyerhaeuser Co.	91
Heppenstall Co.	63	Whiting Corp.	31
C. Lester Horn	84	Williams-Gray Co.	90
Huyck Felt Co.	35	Wisconsin Wire Works	56
International Nickel Co.	54	Yarnall-Waring Co.	18

INTRODUCING THE NEW

DRYDEN-EAST

HOTEL

39th St., East of Lexington Ave.

NEW YORK

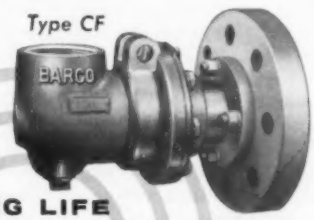
Salon-size rooms • Terraces • New appointments, newly decorated • New 21" color TV • FM radio • New controlled air conditioning • New extension phones in bathroom • New private cocktail bar • Choice East Side, midtown area • A new concept of service. Prompt, pleasant, unobtrusive.

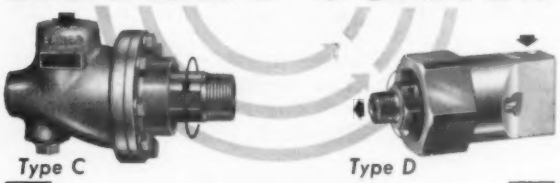
Single $15 to $22 Suites to $60
Special rates by the month or lease

Robert Sarason, General Manager
ORegon 9-3900
Teletype NY 1-4295

Check with BARCO *for* LONG LIFE

ROTARY JOINTS





BARCO is HEADQUARTERS for Rotary Joints!
Types . . . Sizes . . . Styles for every purpose:

Type C—Top performer in industry for dryers, dry cans, rolls, and drums. Threaded ends, ½" to 3". Syphon or single flow. Steam, water, oil, air, gas, or chemicals. Also Type CR for rotating syphon.

Type CF—Flanged end connection for easy installation. 1½", 2", 2½", 3". 200-225 psi.

Series 300—Large size, up to 2½" x 2½", 300 psi joints for circulating liquids. To 600° F.

Type CC—New heavy duty rotary joint for handling shock loads on calender rolls.

Types D - E—High speed, ball bearing ¼" rotary joints for hydraulic fluids, coolants, and compressed air on spindles, drills, and clutches.

Write ▶ *Send for latest catalogs.* BARCO MANUFACTURING CO.
573L Hough Street • Barrington, Illinois

Chemical Pulping Processes

Chemipulp and Chemipulp-KC systems help achieve maximum production of uniform, high quality pulp at lower cost and provide means for efficient recovery of heat and chemicals.

- Hot Acid Systems
- Independent Recovery Systems
- Recovery Towers
- Digester Circulating Systems
- Chip Distributors
- Jet-Type Sulphur Burners
- Spray-Type SO_2 Gas Cooling Systems
- Sulphite Acid Systems
- Neutral Sulphite Semi-Chemical Liquor Plants
- Hydroheaters
- Black Liquor Oxidation Systems for Sulphate Pulp Mills

Chemipulp Process, Inc.
Watertown, N. Y.

Associated with
Chemipulp Process, Ltd., 253 Ontario St., Kingston, Ont.
•
Pacific Coast Representative
A. H. Lundberg Inc., P.O. Box 186, Mercer Island, Wash.

PULP & PAPER

ALBERT W. WILSON Editor
MAURICE CASTAGNE Associate Editor
VINCENT W. DE SALVO Managing Editor
WM. F. DIEHL JR. Southern Editor
LOUIS H. BLACKERBY Western Editor
C. L. SHAW Canadian Edit. Director
PETER INSERRA Assistant Editor
STUART F. LEETE District Mgr.

District Sales Managers

JOHN W. ANDERSON Cleveland
ROBERTS H. BURTON Chicago
KENNETH A. JOHNSON New York
STEPHANIE POLLITZER Prod. Mgr.
MAUDE CONRAD Asst. Prod. Mgr.
CHARLES C. BAAKE Circ. Mgr.

RALPH R. DAVID
General Manager

National Editors Around the World

Argentina: Julio Cesar Lera; **Australia:** Dr. Wilby E. Cohen; **Austria:** Dr. Georg H. Sääf-Norden; **Belgium:** William F. Boks; **Brazil:** Eugene Field Horn; **Chile:** Sergio Valenzuela M; **Czechoslovakia:** Dr. Jaraslav Havránek; **Denmark:** Erik Persson; **East Germany:** Dr. Ernst Giese; **Egypt:** Youssef Fouad; **Fed. Rep. of Germany:** Dr. Emil Fischer (economics); Dr. Phil Hellmuth Müller-Clemm (technical); **Finland:** Nils J. Lindberg; **France:** Jean Usse; **Hungary:** Dr. Georg Vamos; **India:** Dr. R.V. Bhat, Dr. J.C. Aggarwala; **Indonesia:** Ing. Liem Yoe Tjiang; **Ireland:** Dr. Peter G. Sherry; **Israel:** M.D. Cohen; **Italy:** Francesco Pastina, Alessandro Restagno; **Japan:** Motoki Matsunaga; **Mexico:** C. García Robles; **Netherlands:** Henk Voorn; **New Zealand:** A.R. Entrican; **Norway:** Hans Petter Dahm, **Pakistan:** Fakhruddin Ahmed; **Philippines:** A.A. Adamson; **Poland:** Prof. Edward Szwaresztajn; **Rumania:** O. Russo; **U.S.S.R.:** V.A. Galasiev, H. Djaliloy; **Spain:** Jose Luis Asenjo; **Sweden:** Dr. Olle Andersson; **Switzerland:** Siegfried H. Aeschbacher; **Taiwan:** Ni-Hung Chang; **Turkey:** Mufit Erenli, Fahir Sipahi; **Union of So. Africa:** Tom Macdonald; **United Kingdom:** F.H. Llewellyn Thomas; **Uruguay:** Juan Carlos Raffo Fravega; **Yugoslavia:** Bozidar Strasek.

A Miller Freeman Publication

WILLIAM B. FREEMAN President
MILLER FREEMAN JR. Exec. Vice Pres.

ABC AUDITED PAID CIRCULATION — READERSHIP Eastman RESEARCH — ABP BUSINESS PAPER LEADERSHIP

General Office
370 Lexington Ave. New York 17, N. Y.
MUrray Hill 3-9294

District Offices:

Chicago 26, Ill.—1791 Howard St.
RO 4-3420
Atlanta 12, Ga.—2123 Liddell Dr., N.E.,
TRinity 6-9086
Cleveland 3, Ohio—4500 Euclid Ave.,
EXpress 1-4180
Seattle 4, Wash.—71 Columbia St.,
MAin 2-1626
Vancouver 3, Can.—402 Pender St., W.,
MUtual 5-7287
Portland 5, Ore., 731 SW Oak St.,
CA 2-1313
San Francisco 5, Calif.—500 Howard St.,
EX 7-1881
Los Angeles 65, Calif.—3501 Eagle Rock
Blvd., CL 5-7194
London, W. 1, England—Bernard W.
Lansdowne, 130 Crawford St.,
WELbeck 3624
Köln-Merheim, Germany—Dr. Walter F.
Vogeno, 28 Attendorner Str.

mf MILLER FREEMAN PUBLICATIONS

The last word

E. H. Neese Personified Importance of Friendship in Industry

Hundreds of individuals in this industry—not only the many top flight executives who knew him so intimately but those in other positions, too—will feel a genuine sense of personal loss in the passing of Elbert Haven Neese.

Mr. Neese was chairman of the board (1952-1961), president (1931-1952) and vice-president (1916-1931) of Beloit Iron Works. During all of those years he was the principal force behind the development of what had been a little foundry in a small Wisconsin town into a great industry of national and international ramifications. Due to his efforts and keen insight there is no corner left in the entire paper world where the name of Beloit is not known or where a Beloit man has not been. All this has brought credit to the paper industry, too.

We editors of PULP & PAPER, and some others, too, are well aware that Mr. Neese was a force for good in the whole paper industry, and not only his own company. Quite a few paper companies, which are big and successful today, owe some measure of this success to the cooperation, the "partnership" spirit, the loyalty and support, and, sometimes, the inspiration and foresight which Mr. Neese gave to them. This was especially true in the depression years. But all through his career Mr. Neese personally was closely identified with the growth of many of the companies which are big names in paper today. He also gave much more than might have been expected from a machine company in support of research, public relations and other activities for the general good of the paper industry. He was a good citizen of the paper industry in the fullest sense of that word.

Even after Harry Moore succeeded him as president, Mr. Neese continued his keen interest in customer relations—this had been his strong point in his years with Pusey-Jones (1903-1916), finally as its vice president and sales manager, and, after that, at Beloit. He liked people wholeheartedly.

He was the first person to tell the joke on himself of "marrying the boss' daughter"—the daughter of Alonzo Aldrich of Beloit. He and the boss' daughter were a wonderful team—but he won his own spurs in business so he could afford to joke about it. A very talented painter, who has had her own successful art shows, she, too, won spurs of her own. Her paintings done in the Beloit shops have been familiar to PULP & PAPER readers.

MR. NEESE

One time when a group from a very big Middle West paper company was discussing a coating project with Beloit engineers, his own men seemed to him to be taking over-eager leadership in the conference, a little too much to please Mr. Neese. He listened through it all, but at the end, he rose to say the paper firm had a lot of experience in the field (he had sold them coaters way back before the war) and they would be guiding the project from that point on.

Mr. Neese had a strong nostalgia for "the old days." The new technical trends, and the innumerable technical questions arising from them, were often a stern test of his patience. He liked getting to the point directly. But even while he often would say these new ideas were over his head, it was a risky business to believe that. He kept up with the new developments in his own quiet way.

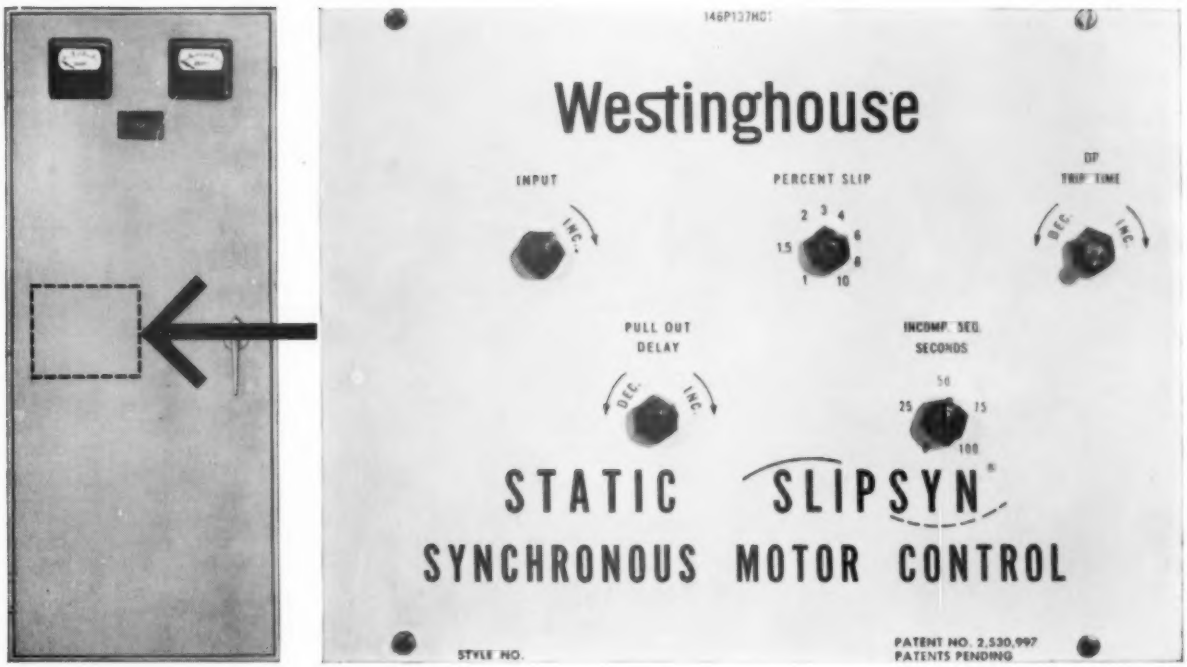
In his company, a man seldom would tell Mr. Neese: "I don't know." He soon learned the right answer was: "I will find out."

Very often when one of his staff would give an excellent report on some technical matter, Mr. Neese had his off-hand way of patting him on the back.

"I didn't understand any of it, but you sure spoke loud and clear!" he might say.

The man who made the report knew, however, that from Mr. Neese these were words of high praise.

Now... Westinghouse Static Slipsyn* Control includes 3 more static protective features for synchronous motors



1. STATIC DAMPER WINDING NETWORK protects synchronous motors against damage by locked rotor or excessively-long starting conditions. This circuit may be quickly and easily added to your present static units.

2. STATIC FIELD LOSS NETWORK protects motors against abnormal conditions resulting from loss of d-c excitation.

3. STATIC INCOMPLETE SEQUENCE NETWORK protects the motor in case it fails to sequence properly during start up.

These features, added to the basic Westinghouse exclusive Static Slipsyn control make Static Slipsyn more than ever, the best control available. Its advantages:

Most accurate synchronization system available—accuracy up to 99% of synchronous speeds — not affected by machine vibrations.

Adjustable pull-out protection—eliminates nuisance tripping due to transient conditions — easily adjusts from the front — can be set to re-synchronize or shutdown on actual pullout.

No maintenance — completely static transistorized synchronizing system — uses no moving parts — components are impervious to humid, corrosive or dirty atmospheres — there are no relays to burn, pit, inspect or repair.

Applicable to all synchronous motor starters—same sized package for all applications — for both high and low voltage — whether for new motor installation or for relay replacement.

For additional information on the advantages of Static Slipsyn Control for synchronous motors in *all* manufacturing operations, call your local Westinghouse sales engineer or write to: Westinghouse Electric Corporation, General Purpose Control Department, P.O. Box 2025, Buffalo 5, New York.

You can be sure ... if it's **Westinghouse**

*Trademark

J-25011

PULP

Perkins-Goodwin Co.

Established 1846

PULP AND PAPER MARKETING-MANAGEMENT

1 ROCKEFELLER PLAZA, NEW YORK 20, N.Y.

CHICAGO, ILL. • KALAMAZOO, MICH. • LUFKIN, TEXAS • LOCKPORT, LA. • SAN FRANCISCO, CAL. • STOCKHOLM, SWEDEN

PAPER